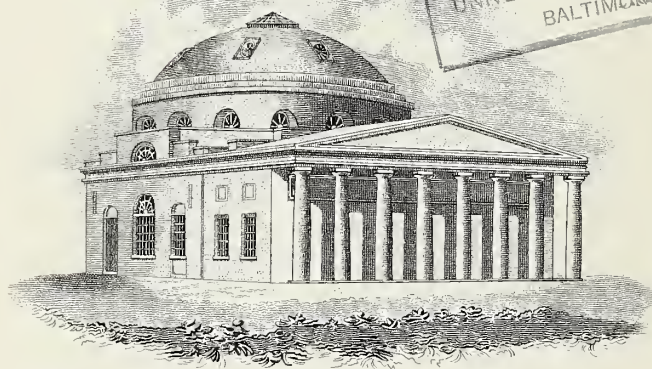



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DIAGNOSIS AND TREATMENT OF ENDOLYMPHATIC HYDROPS (MENIERE'S DISEASE)

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Ménière's disease is a condition which is diagnosed far more frequently than would sometimes seem justified. Ménière¹ himself is largely responsible for the confusion that has arisen in regard to the proper recognition of the syndrome that bears his name. He clearly described a condition of recurring vertigo, associated with nausea and vomiting, and deafness, usually unilateral and increased during attacks, with tinnitus in the involved ear. Very little has been added to this description. Mygind and Dederding²⁻⁴ called attention to the fluctuating character of the loss of hearing between attacks and the tendency for severe referred, pulsating headaches to occur in the intervals. Crowe⁵ called attention to the fluctuating character of the deafness between attacks and stated that in his opinion the only tenable hypothesis to explain the symptoms was varying intralabyrinthine pressure. Brunner⁶ pointed out that labyrinthine vertigo which reaches a high degree of intensity always is accompanied by spontaneous nystagmus, that in Ménière's disease in the course of an attack nystagmus will attain the third degree of intensity and that the quick component will be directed toward the sound ear. Harris and Moore⁷ were among the first to draw attention to the tendency of Ménière's disease to involve both labyrinths to some degree at least and to suggest treatment with nicotinic acid.

Ménière introduced a great deal of confusion into the conception of this disorder by ascribing it to a grumose or bloody exudate into the labyrinth. He did this on the basis of post-mortem examination in a single case in which high fever, prostration and severe vertigo on movement of the head developed after the patient had been exposed to cold while riding on a coach. The patient died on the

fifth day of illness. At necropsy the only pathologic findings were a bloody exudate in the semi-circular canals and traces of exudate in the vestibule. As M'Kenzie⁸ stated, whatever this patient had, it was not Ménière's disease. The misinformation as to the pathologic basis of Ménière's disease, however, led many authors to include any case of either dizziness or vertigo as one of Ménière's "symptom complex," but as Crowe stated, the true clinical condition is sufficiently characteristic to justify its attribution to a specific type of labyrinthine disorder.

Ménière's disease, therefore, may be defined as a disorder characterized by paroxysmal attacks of vertigo with nystagmus in which the quick component is away from the involved labyrinth and associated with nausea and, frequently, vomiting. Deafness is usually present on the involved side and usually has appeared before the first attack of vertigo but may not be evident until afterward. The tinnitus fluctuates greatly between attacks of vertigo; it may be the first symptom, or it may not appear until after the first attack. The tinnitus is usually of the pulsating type. Most characteristic of Ménière's disease is the interval between attacks.

Diagnosis

It is important in making a diagnosis of Ménière's disease to distinguish between dizziness and vertigo. Vertigo in the strict sense of the term describes an experience in which the patient has the sensation that the outer world is moving in a circular direction around him (objective vertigo), which occurs with the eyes open, or that he himself is twirling in space (subjective vertigo), which occurs with the eyes closed. In other words the sensation is one of angular acceleration about an axis. The terms "dizziness" and "giddiness" should be restricted to an abnormal sensation of unsteadiness characterized by a feeling of movement within the head without the sensation that the outer world or the patient himself is in motion or a feeling of in-coordination in movement.

As Weiss⁹ stated, since patients describe vertigo or dizziness indiscriminately as "swimming," "reeling," "giddiness," "lightheadedness," "faintness," "drunken feeling" or a "sense of foolishness," the first step in the treatment of vertigo or dizziness is proper analysis and interpretation of the patient's complaints.

Fortunately much of the confusion and controversy in regard to Ménière's disease has been cleared up by the findings at necropsy in authenticated cases of this disorder. Since the first two cases were reported by Hallpike and Cairns¹⁰ twelve additional cases have been reported by Hallpike and Wright,¹¹ by Rollin,¹² by Lindsay¹³ and by Altmann and Fowler.¹⁴ In all cases gross dilatation of the endolymphatic system affected chiefly the scala media (ductus cochlearis, B. N. A.) and the saccule and utricle. Degenerative changes are found in the organ of Corti and at times in the stria vascularis. In all cases reported, inflammatory changes have been conspicuously absent. This pathologic picture at once disposes of a vast group of disorders that have been termed "pseudo Ménière's disease" in which the underlying condition is inflammation. It also goes far to controvert much of the purely imaginary physiology described by Atkinson^{15, 16} and his contention that two types of Ménière's disease exist, one depending on vasodilatation, the other on vasoconstriction. It also gives an opportunity to substitute a descriptive term, "endolymphatic hydrops," for the confusing term "Ménière's disease."

Differential diagnosis.—Endolymphatic hydrops must be differentiated from other conditions causing vertigo or dizziness. To make this differentiation clearer, certain anatomic and physiologic facts should be borne in mind. The hair cells of the cristae ampullares and maculae of the saccule and utricle send out neuraxons which unite to form the vestibular portion of the eighth cranial nerve. This nerve ends on the dorsal side of the pons and medulla in three nuclei: (1) the dorsal nucleus in the floor of the fourth ventricle; (2) the nucleus of the descending root; and (3) Deiters' nucleus, part of which is in the floor of the fourth ventricle. The dorsal nucleus and Deiters' nucleus are linked with the cerebellum in the direct sensory cerebellar tract. Sensory fibers enter Deiters' nucleus from as far down as the lumbar region. These fibers are associated closely with the anterior motor horn cells and partake in reflexes from proprioceptive sensations. Deiters' nucleus is connected through the medial longitudinal fasciculus with the oculomotor, abducens and trochlear nuclei through which the eyes exert their influence on equilibrium and through which nystagmus is produced in

vertigo. Deiters' nucleus is connected with the nucleus of the vagus nerve and through it with the autonomic nervous system; hence pallor, sweats, nausea and vomiting are associated with severe vertigo. Deiters' nucleus is connected with the cortex of the temporal lobe of the cerebrum, which is considered to be the center for the sense of motion. Thus the importance of Deiters' nucleus as a connecting link between the labyrinth and many of the important centers in the brain and spinal cord is apparent.

In normal states this interlocking control mechanism, which is mostly bilaterally represented, is so poised that there is compensation for all movements and changes of position of any part of the body. If any part of this system gets out of step with the system as a whole, however, that relationship is upset and conflicting impressions are transmitted which the higher centers cannot coordinate, the resultant confusion becoming either dizziness or vertigo. True vertigo arises only from disturbance of the vestibular end-organs or nuclei—dizziness and in-coordination may arise from disturbances of the proprioceptive, exteroceptive and central portion of the mechanism.

If impulses arising in the vestibular nerve at its origin in the labyrinth produce undue stimulation, vertigo and nystagmus result. This fact is made use of in making functional vestibular tests. Stimulation of the labyrinth itself seems to produce a much more marked sense of angular or linear acceleration than irritation arising in the vestibular nuclei. Disturbances that are central in origin produce less definite sensations than those that are labyrinthine in origin. The patient is always unable to give a clear description of his sensations. He describes them as an indefinite feeling of confusion and things wavering before the eyes, and he has unsteadiness in gait and a desire to keep from falling. Central dizziness may begin when the patient is at rest, and it is independent of movement. This distinguishes it from dizziness produced by disturbances of the proprioceptive and exteroceptive sensations.

Vertigo and dizziness may occur in connection with many systemic conditions, notably the anemias and leukemias, peripheral arterial disease and endocrine disorders. An incomplete list of specific causes for vertigo or dizziness follows:

I. Ocular

1. Abnormalities in the dioptric apparatus (dizziness).
2. Paralysis of extra-ocular muscles (vertigo).
3. Optokinetic nystagmus (vertigo).
4. Looking down from heights (dizziness).

II. Aural

1. Obstruction of eustachian tubes (vertigo).
2. Otitis media (vertigo).
3. Labyrinthitis (serous or suppurative) (vertigo).
4. Erosion of the labyrinth by cholesteatoma (vertigo).
5. Embolus of auditory artery or hemorrhage into labyrinth (vertigo).
6. Blood dyscrasias with invasion of labyrinth (vertigo).

III. Neurologic

1. Sympathetic spasm of auditory artery (vertigo).
2. Arteriosclerosis of central nervous system (dizziness).
3. Tumors of the fourth ventricle (vertigo).
4. Thrombosis of posterior inferior cerebellar artery (vertigo).
5. Carotid sinus syndrome (dizziness).
6. Syphilis or poliomyelitis affecting the brain stem (vertigo).
7. Multiple sclerosis (vertigo).
8. Syringobulbia (vertigo).
9. Tumors and abscesses of cerebellum (dizziness).

IV. Psychogenic (dizziness).

Some of the various causes of vertigo will be described. Vertigo may be present with tumors of the posterior fossa, but it is not a frequent nor is it a prominent symptom. Even in association with tumors of the brain stem it is uncommon, since infiltrative tumors have a tendency to infiltrate without completely destroying all the nerve fibers in the invaded area. Episodic attacks of vertigo are, however, characteristic of tumors of the fourth ventricle.¹⁷

Toxins from focal infections in teeth, tonsils or sinuses or the toxic effects of certain drugs, such as quinine, tobacco, the salicylates and the sulfonamide group, may cause vertigo. Characteristic of these expressions of vertigo, however, is their association with infection or the ingestion of drugs. However, in any case of recurrent attacks of vertigo a careful search for foci should be made and a careful history of possible exposure to toxic substances should be taken.

A rather persistent and not easily relieved form of both dizziness and vertigo occurs in older people as the result of sclerosis of the cerebral vessels. The vertigo probably is caused by lack of proper oxygenation of the nerve cells of the labyrinth or of the vestibular nuclei. Sclerosis of the auditory artery¹⁸⁻²⁰ or of its branch to the

vestibule also may produce transient attacks of vertigo since this is a very small end-artery which runs a long course from its origin at the vertebral artery. Vascular spasm of this vessel associated with sudden changes of position probably accounts for the positional vertigo so often seen in elderly people. Fairly frequently it occurs in the intervals between paroxysms of endolymphatic hydrops. The presence of arteriosclerosis of the central nervous system as a cause of vertigo may be suspected when examination of the fundus oculi shows that retinal arteriosclerosis is present.

The posterior inferior cerebellar artery supplies the vestibular tracts and nuclei, and thrombosis of this vessel causes severe vertigo which will disappear slowly. The vertigo associated with lesions of the cerebellar artery is easy to recognize as it is associated with cerebellar dyskinesia, loss of sensations of pain and temperature on the ipsilateral side of the face and the opposite side of the body, and disturbances in swallowing and phonation.

On paper all the conditions described are relatively easy to distinguish from endolymphatic hydrops, but when the physician is confronted with a patient he may find himself called on to exercise all of the talent he has for history taking and all of the clinical judgment he has gained from previous experience to make a differential diagnosis.

The vertigo associated with a discharging ear, whether from erosion by a cholesteatoma in chronic suppuration or from basal petrositis (perilabyrinthitis) in both acute and chronic otitis, should present few difficulties in diagnosis, but vertigo associated with the severe head pain of myalgia²¹ may not be distinguished from labyrinthine and dural irritation until it persists after adequate operation.

It is also most difficult at times, as Scott²² and Merica²³ have pointed out, to distinguish attacks of vertigo produced by the interference with pressure relationships on the two sides of the drum owing to occlusion of the eustachian tube from endolymphatic hydrops. Shield²⁴ stated that such vertigo may occur as the aftermath of acute infection of the upper part of the respiratory tract, in myxedema or in lowered basal metabolism without myxedema. These conditions are sufficiently difficult to differentiate that a diagnosis of endolymphatic hydrops should not be made until the auditory tube on the affected side has been found to be unobstructed. A carefully taken history often will suggest tubal occlusion. Impaction of foreign bodies in the external auditory canals, as well as inspissated cerumen, has been reported

also to cause vertigo. Multiple sclerosis may also cause episodic vertigo, and indeed vertigo often may be the first symptom of the disease. The characteristic pallor of the temporal sides of the optic disks is an important differential point in this condition.

Bruns' syndrome of Cysticercus occluding the fourth ventricle may be exceedingly difficult to distinguish from endolymphatic hydrops since paroxysmal attacks of vertigo, nausea, and vomiting may occur. Important differential points are that the head may be held stiffly in one position to avoid displacement of the cyst to a position where it will block one of the foramina, headache accompanies the paroxysms and choked disk is usually present.

Grove²⁵ stated that following trauma to the head true spontaneous vertigo, episodic in character and associated with tinnitus, nausea or vomiting may occur. This is secondary to multiple hemorrhages in the vestibular nuclei and is likely to be persistent. Mere dizziness following injury of the head is not significant of trauma. Inquiry will disclose an inadequate, poorly adjusted personality in which the complaint of dizziness is a means of escape.

A sudden attack of vertigo with nausea and vomiting produces a great psychic shock. Because consciousness is a corollary of vertigo the sensation that the room is beginning to whirl around followed by vomiting, in the presence of others, is an embarrassing experience not easily forgotten. Patients who have experienced an attack of severe vertigo, whether it results from endolymphatic hydrops or toxic or any other type of vertigo usually are in a tension state from anxiety. Anxiety may be so marked that it is extremely difficult to tell whether the patient is having continuing attacks of vertigo or of anxiety. Even in endolymphatic hydrops treatment of the anxiety state by discussion, explanation, and relaxing physical therapy is an important part.

Ocular disorders do not seem to produce severe vertigo and are, as a rule, easily differentiated.

Medical Treatment of Meniere's Disease

To carry out rational treatment the pathologic picture produced by the disease process must be known and also the altered physiologic activities which led to such a resultant. The pathologic picture, as has been stated, is that of extracellular edema. From the clinical history it is evident that the process fluctuates. It is difficult if not impossible to find fluctuating extracellular edema which does not have an allergic cause. Indeed in a few instances endolymphatic hydrops has been demonstrated to occur as the result of specific sensitivity

to certain foods. However, Lindsay felt that the difficulty in securing evidence of an immunologic reaction in endolymphatic hydrops made it impossible for him to accept the conclusion that the condition is allergic in origin. Shambaugh and Roberts²⁶ also complained of the difficulty of relieving the symptoms of endolymphatic hydrops by routine methods of treating allergies even when desensitization with house dust was the method used.

However, it now is generally recognized that allergic reactions are associated with injury of cells which permits release of histamine into the tissue spaces. Such release of histamine results in the production of the allergic phenomena by increased capillary permeability and interference with water and electrolyte metabolism. That there is a disordered physiologic mechanism other than the antigen-antibody reaction by which histamine may be released into the tissue spaces in abnormal quantities originally was pointed out by Duke²⁷ in his description of physical allergy. He pointed out that physical allergy may be of two types: the contact type and the reflex type in which stimuli acting through the autonomic nervous system produce release of histamine in abnormal quantities in cells at a distance from the original stimulus.

Selye²⁸ has described an "alarm reaction," a normal physiologic mechanism through which physical and emotional stimuli release histamine in physiologic quantities. A perversion of this mechanism would result in the reflex type of physical allergy described by Duke. Müller²⁹ has described further an inherited, abnormal condition of the capillaries occurring in conditions ascribed to physical allergy. When the patients who have this condition are exposed to physical or emotional stimuli, instead of a regular arrangement of capillary loops functioning to furnish adequate nutrition to each individual cell, normally functioning capillaries are interspersed with the abnormal capillary loops. In these abnormal areas the arterial side of the capillary loop is reduced to a thread, the middle portion is tremendously dilated and the venous portion has the appearance of a varix. The cells which make up the wall of the capillary are swollen and appear foggy. In these abnormal capillary loops, according to Müller, the walls of the capillaries are abnormally permeable and the intracellular fluid in the tissue spaces is increased. This condition has been described by Müller as occurring in migraine, vasomotor rhinitis, angioneurotic edema, myalgia, Ménière's disease and scleroderma, all being conditions which he ascribed to physical or intrinsic allergy. The occurrence of this capillary picture in scleroderma has been confirmed by O'Leary.³⁰ Müller stressed

the fact that the inherited factor is the tendency for this abnormal capillary picture to develop when the individual is subjected to stress, such as infection, fatigue, chilling of the body surface and emotional stress. It seems probable that Müller has described the anatomico-physiologic basis of physical allergy. Acceptance of the hypothesis of physical allergy at once eliminates all of the objections that have been raised to accepting endolymphatic hydrops as a form of allergy.

It can be seen that all methods of medical treatment that have been successful in relieving symptoms of endolymphatic hydrops have been based on the concept that it is a form of allergy. Authors from Foldes³¹ through Mygind and Dederding,² Furstenberg and his co-workers^{32, 33} to Talbott and Brown³⁴ have advocated treatment on this hypothetic basis. Efforts have been directed toward controlling the defective water metabolism by limiting fluid intake; controlling the faulty electrolyte metabolism by withholding or administering certain electrolytes, and stimulation of the autonomic nervous system. With the concept that an abnormal capillary reaction is usually the basis of endolymphatic hydrops, measures directed toward restoring normal function in the capillaries may be used. These consist in using vasodilators, such as nicotinic acid, histamine, neostigmine and magnesium sulfate. These substances are thought to dilate the tonically contracted "lock muscle" at the beginning of the capillary loop described by Müller and, by flushing out the capillary loop, to wash the histamine into the general circulation where it is diluted and metabolized.

Use of nicotinic acid in endolymphatic hydrops was first suggested by Harris and Moore, and I have found it to be the easiest of the vasodilators to administer. I have found that with either nicotinic acid or histamine alone results superior to those obtainable by controlling water and electrolyte metabolism may be secured, but there seems no obvious reason why these various methods should not be combined. Therefore I have suggested that the total intake of fluids be limited to not more than 3,000 cc. (12 glasses), preferably less, that care be taken that the drinking water does not contain excessive amounts of the sodium ion, that extra salt be not added to the cooked food, and that salty foods be avoided. In addition I give from 1 to 2 gm. of potassium nitrate in enteric-coated tablets three times a day with meals. In addition to this nicotinic acid is given hypodermically, starting with 25 mg. and increasing by this amount with each injection until a dose relieving symptoms, the so-called optimal dose, is reached. This has been found to be 100 mg. in

most cases, but it must be kept in mind that some patients are unable to tolerate a dose of this magnitude without precipitation of symptoms, while others may require doses as high as 200 to 300 mg. daily. With this regimen and judicious psychiatric treatment of the anxiety tension state, approximately 80 per cent of patients at the Mayo Clinic who have endolymphatic hydrops have been relieved of their symptoms. Treatment with vasodilators should not be continued longer than six months without a rest period of several weeks to a month, as any of the vasodilators when administered for longer periods gradually will lose their efficiency in controlling symptoms.

For acute attacks of endolymphatic hydrops a few minims of epinephrine given intravenously will prove effective almost immediately as will rather large doses of atropine (1/75 grain [0.86 mg.]). Benadryl has also been found to be moderately effective.

Surgical Treatment of Endolymphatic Hydrops (Meniere's Disease)

In certain cases of endolymphatic hydrops all types of medical treatment are ineffective. In such instances fenestration of the labyrinth with destruction of the membranous labyrinth, an operation recently described and used by Day,³⁵ has proved the most effective treatment. In a superficial review of the literature from Lake^{36, 38} in 1904 to Day in 1943 more than fifty cases were found in which paroxysmal attacks of endolymphatic hydrops were successfully abolished. The intracranial division of the eighth cranial nerve advised by Dandy³⁹ on the false concept that Ménière's disease was a disorder of the eighth cranial nerve comparable to tic douloureux of the fifth cranial nerve scarcely seems advisable when a simple procedure will produce better results. This seems especially true since the partial section proposed by Dandy has failed to relieve symptoms of endolymphatic hydrops in instances in which hearing has been preserved.⁴⁰

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MEDICAL MANAGEMENT OF THE COMPLICATIONS OF PEPTIC ULCER*

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It is common knowledge that peptic ulcer is a chronic disease characterized by remissions and exacerbations and that it may be arrested but seldom cured. A peptic ulcer seldom heals in less than twelve months, but during most of this period the patient may be symptom free. Believing the ulcer to be no longer active, the patient will discontinue the strict regime, and soon he experiences complications or, in more common terminology, recurrence of symptoms. In common practice little recognition is given to the difference between the terms symptoms and complications; therefore, only the dramatic recurrences have been considered as complications. Webster defines a complication as "a disease or diseases, or adventitious circumstances, coexistent with or modifying a primary disease but not necessarily connected with it." In terms of this definition, any recurring distress not actually due to the ulcer itself is a complication. Mental upsets and constipation may thus be considered as complications.

When an ulcer is active, there is considerable edema about the lesion. Marked peristalsis and hypermotility coexist. As the lesion heals, the edema disappears and scarring soon begins. The scarring is progressive and, at times, may be extensive. In the stomach, itself, the scarring must be considerable before it causes primary symptoms; however, in the duodenum little distortion is required to set up a new set of symptoms. Because the process of scarring is slow and progressive, it may result in no particular distress. The patient, believing his ulcer to be arrested, resorts to his old mode of living, even though he may adhere to a definite diet. The mode of living determines the amount of activity present in the stomach, and the patient soon experiences recurring distress due, not to the ulcer itself, but to subsequent pathologic and physiologic changes.

The most common complication in ulcer cases arises from the fact that peptic ulcer is a disease of psychosomatic origin, and occurs in persons who are born with a certain type of mental and physical pattern. Such people are high-strung and live under constant nervous tension. Their attacks of distress often arise from factors which they are unable to recognize and differentiate. After having been placed on medical management,

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they often unconsciously return to their normal pattern of living, wherein the factors which caused the original lesion again operate. When under stress, such persons develop spasm of the entire stomach, particularly of the antral end. When observed gastroscopically, the stomach of the typical ulcer patient exhibits small raised areas in the mucosa which have the appearance of those seen in hypertrophic gastritis. The red color of the mucosa is more pronounced as a result of engorgement, and excess fluid secretion is observed. Distress under such conditions has been shown to parallel the passage of a peristaltic wave over the pylorus. This clinical picture is seen often in persons who have either a duodenal ulcer or a benign gastric ulcer, and it occurs so frequently that it has become a part of the symptomatology of the benign peptic ulcer syndrome.

The recurring periods of distress which are typical of the ulcer patient are usually precipitated by some mental upset, by nervous strain, or by overwork. The treatment of the distress is not complete without the correction of the patient's mental pattern and of his attitude toward his condition. If the patient has previously been instructed and placed on an adequate anti-ulcer regime, a further change in the diet is not the prime requisite. Rather, it is the physician's duty to gain the confidence of the patient and to ascertain the factors which are responsible for the recurring distress. Very often the patient is sure that some abnormal change is taking place in his stomach; he fears the development of another ulcer or of a cancer. Often he says that he feels as if the lining of his stomach were "being eaten away." It is necessary that the doctor discuss the abnormal physiology with the patient to convince him that pain can occur without any histologic changes. After the patient has been shown that his distress is merely the result of a spasm, the doctor can add to the diet such medication as belladonna, atropine, traserin, syntropan, or mesopin.¹ The mode of treatment of this complication then follows that of the original ulcer itself. It is well to emphasize that this complication usually indicates a difficult patient, not an intractable ulcer.

Another complication, constipation, is of such common occurrence that it is usually considered a part of the symptomatology of the original lesion.² The predisposing factors in constipation are varied. The diet, particularly a milk and cream regime, may be a causative factor. More commonly the overactivity and spasm which occur at the pyloric end of the stomach are responsible. As a result of pylorospasm and marked hyper-

activity of the stomach, the food is churned and broken down into small, fine particles before passing into the small bowel. After the water is absorbed, there is little residue left, and the result is a small, round, hard, scybalous stool. A similar bowel condition may arise from failure of the patient to drink sufficient liquids. Constipation as a complication may cause epigastric pain more frequently than does the ulcer. The prevention of constipation is of primary importance in ulcer management. Methods of treatment have been outlined in a previous publication.³

Mild pyloric obstruction is also a very common complication. The commonest and most important factors contributing to pyloric obstruction in ulcer patients are the pylorospasm, hypertonicity, and hyperperistalsis which accompany the ulcer syndrome. However, during the acute phase of ulcer activity, the edema of the gastric and duodenal mucosa in the area of the lesion may be great enough to cause some degree of obstruction. Moreover, as the ulcer heals, the scarring that ensues may result in enough distortion to give mild pyloric obstruction. Obstructive distortion at the antral end of the stomach is seen quite regularly during gastroscopic examination of patients with duodenal ulcers. The angulus, as a rule, is distorted, and the pyloric opening may be displaced, usually to the right, but, in a few instances, to the left. Such observations are so common that they play an important part in gastroscopic diagnostic interpretations. Pylorospasm, augmented by such obstructive distortions, gives rise to many of the common ulcer symptoms.

Mild pyloric obstruction should always be treated medically. Some obstructions which, judging from roentgenologic examination, were classified as complete, have, in our experience, relaxed completely under medical management; many such patients have shown no recurrence during the hospital stay. The roentgenogram is often misleading because the procedure of obtaining it is not physiologic. Such procedures necessitate examination after fasting. The fasting ulcer stomach always presents more spasm and tension than the non-fasting stomach. Secondly, the barium meal, because of its weight and composition, tends to increase the degree of spasm. It is, therefore, a good rule to subject patients with obstruction, no matter how severe, to a period of medical management before surgical intervention.

Adequate medical management of mild pyloric obstruction should be directed toward relaxation of pyloric spasm. Treatment should include rest in bed, barbiturates, and antacid therapy, as indicated. Atropine may be administered; the usual

dose of atropine sulfate is 1/75 grain hypodermically every four hours. Occasional vomiting can be controlled by small feedings of a bland diet every hour. Milk and cream are preferable for this purpose, because such a meal is easier to recover with a stomach tube. If the amount of food intake is known, the degree of retention in the stomach can be measured from day to day. A Rehfus tube is introduced three hours after the last feeding and the stomach completely evacuated; the residue withdrawn will give an indication of the degree of obstruction and the progress of pyloric relaxation. The amount of residuum obtained the first two or three nights is not an indi-

conditions may require little or no special treatment. Schiff⁴ has shown that tarry stools occur when as little as 200 cc. of blood are introduced into the stomach. He also showed that chemical tests for blood in stools may be positive even ten days after the ingestion of 250 cc. of citrated blood. Such slight bleeding is often unrecognized by the patient, and no secondary symptoms arise from such blood loss. If the patients are given a strict anti-ulcer regime, this type of bleeding usually terminates spontaneously.

Massive hemorrhage, on the other hand, is a rather serious complication, calling for immediate treatment. Recently, there has been much discussion of the relative merits of surgical and medical treatment of massive hemorrhage. In 1934, Meulengracht⁵ outlined a treatment of massive hemorrhage from peptic ulcer which was based upon a prompt-feeding regime. He found that prompt feeding of a diet containing protein in the form of ground meat tended to prevent excessive bleeding. A low mortality rate supported his claim for the efficacy of such dietary control. The prompt-feeding treatment was based on the observation of Lenhartz,⁶ who, in 1904, described a dietary treatment for massive hemorrhage in peptic ulcer cases. In a series of 146 patients in which massive hemorrhage was controlled by diet, the mortality rate was only 2.14 per cent. Dietary therapy for massive hemorrhage has given rise to considerable discussion, and its efficacy can be evaluated only by reviewing the numerous reports in the literature. The death rate on the so-called starvation regime has been reported as low as 3.8 per cent and as high as 25 per cent.⁷

With the prompt-feeding regime, the reported death rate varied from 0.0 per cent to 11.2 per cent.⁷ The latter figure was reported in only one series of 80 cases.⁷ In a review of 2,111 cases treated by the prompt-feeding method, Rasberry and Miller⁸ reported a mortality of only 1.9 per cent. The death rate from the surgical treatment, in contrast, varies from 5 per cent to 72 per cent. Meulengracht⁹ states "I consider that a mortality rate of 1/2 per cent on dietary medical management relieves me of the responsibility of having to decide in an individual case whether operation is advisable or not." The question of surgical versus medical management will, however, always have to be answered by the physician in cases of severe hemorrhage from ulcer. The indications for early operation, according to Holman,¹⁰ are immediately recurrent or persistent bleeding after complete rest in bed, or a hemorrhage beginning while the patient is receiving adequate medical treatment in the hospital.

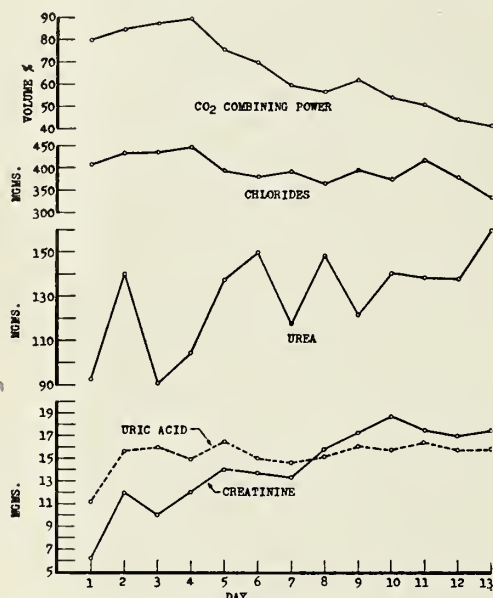


Chart I—L. M. H.-3817, aged 63, had a history of recurring epigastric distress for fifteen years. Three weeks before admission he had begun vomiting and twelve hours before admission had developed anuria. Despite all therapy the anuria persisted, and he died on the thirteenth hospital day. It will be noted that the alkalosis which was present at first, gradually changed so that the findings before death were those of uremia with acidosis.

cation of the degree of the obstruction. If the obstruction is the result of spasm or edema, the amount of food recovered each evening becomes less and less until finally there is little or no residuum. When evacuating the stomach each day, the degree of acidity should be ascertained in order to avoid alkalosis, a complication which will be discussed below. When the obstructive spasm has been relaxed, as indicated by normal emptying time of the stomach, the patient can then be placed on the regular ulcer regime, and he should have no further difficulty.

Bleeding is a complication of common occurrence in peptic ulcer. The majority of ulcer patients during periods of distress show occult blood in their stools. The presence of blood under such

Several factors account for the good results obtained from the immediate feeding regime. The presence of food in the stomach diminishes the frequency of hunger contractions.¹¹ The withholding of food and water does not rest the stomach; in fact, the strongest peristaltic waves occur when the stomach is empty. It has been shown that a fairly well filled stomach is at all times relatively inactive. The presence of food in the stomach will increase the tone of the musculature and serve to maintain a constant pressure on the stomach contents. This increased intragastric and intraduodenal pressure tends to close the open vessels and promotes clot formation.¹² Mills and Necheles¹³ demonstrated a marked shortening of the blood clotting time during absorption of mixed meals, and they felt that this was due to the protein fraction in the food. A high protein diet will replace the blood protein lost by hemorrhage;¹⁴ in addition, the gastric secretions which help dissolve the clot and increase the bleeding from ulcer are buffered by food in the stomach.¹⁵ Schiodt¹⁶ showed that the ingestion of food caused a more rapid regeneration of blood loss by hemorrhage. With prompt feeding the vitamin intake is more adequate, and the possibility of increased bleeding due to a low serum vitamin C level is lessened.⁹ Allowing the patient to eat and drink improves the patient's morale, lessens his fears, and helps him to become calm and comfortable. This results in better cooperation and shortens the convalescent period.^{9, 14, 17}

The treatment of massive hemorrhage must be started as soon as possible. Tidmarsh¹⁸ states that one must start feeding at once in the midst of a hemorrhage if this type of treatment is to prove successful. The patient is placed at rest in bed and given a barbiturate, such as phenobarbital, to ease his anxiety.¹⁸ Morphine is not indicated because it produces too much sedation.^{8, 18} Also, it relaxes the duodenum, which is unfavorable to the cessation of the hemorrhage. The best medication is a combination of atropine sulfate (1/150 grain) and phenobarbital (1/4 grain) given three to four times daily. This will not only reduce much of the distress but will quiet the patient mentally. The diet suggested by Muëlengracht⁵ contained about 2300 calories and was administered as follows:

6 a. m. Tea, white bread and butter.

9 a. m. Oatmeal with milk, white bread and butter.

1 p. m. Dinner consisting of any of the following in unrestricted amounts: meat balls, timbale, broiled chops, omelette, fish-balls, gratin of fish, vegetables or meat,

mashed potatoes, pureed vegetables, cream of vegetables, soup, vegetable soup, stewed apricots, apple sauce, gruel, rice, and tapioca pudding.

3 p. m. Cocoa.

6 p. m. White bread and butter, sliced meats, cheese and tea. In addition the patients received a teaspoonful of the following powder three times a day: sodium bicarbonate, magnesium subcarbonate 15.0, extract hyoscyamus, 2.0.

The simple general diet which we outlined in a previous article is better adapted to our needs.³ The patient is given three small meals a day, and the noon and evening meals contain meat. Milk or milk and cream are given between meals and at bedtime; water is allowed ad libitum. If the patient feels the need of extra milk or ice cream, he can have it to prevent or relieve distress. An insoluble buffer, such as aluminum dihydroxy aminoacetate (alglyn), is given four times a day. It is advisable to give iron in the form of either ferrous sulfate or ferrous lactate early in the treatment.

Transfusions are a valuable aid in combating massive hemorrhage, and very often, if given early, will help stop the bleeding. If the patient has had a large hemorrhage, it is usually advisable to transfuse him with 500 cc. of blood as soon as possible. The necessity for further transfusions is then based on close observation of the patient. If the hemoglobin is less than 5 grams (less than 35 per cent), or if the erythrocyte count is below 2.0 M., more blood is needed.¹⁷ Further transfusions are always indicated if the heart rate rises to 140 per minute and the systolic blood pressure drops to 90 mm. or less. Delirium, persistent headaches, marked restlessness not controlled by barbiturates, and a generally "poor" appearance of patient call for more blood. An estimation of the blood urea nitrogen should be obtained every day for the first few days because this is the best criterion of continued bleeding. If the blood urea nitrogen rises to 50 mg. per cent or above, the patient should be given more blood, because, in all probability, he is continuing to bleed. The average patient needs only two or three transfusions to control his hemorrhage.

Alkalosis is a serious complication of peptic ulcer and demands prompt treatment. It may result from the ingestion of soluble alkalies, such as sodium bicarbonate, or follow the loss of chlorides from vomiting, as in pyloric obstruction. Alkalosis is characterized chemically by an elevation of the serum carbon dioxide and hydrogen ion concentration, and a decrease in the serum

chloride. As this condition develops, the blood urea nitrogen, creatinine, and uric acid increase. When soluble alkalies are used during the treatment of peptic ulcer, there is an increase in the sodium, total base, hydrogen ion concentration, and bicarbonate level of the blood. As a rule this causes no untoward effects if the patient's renal function is normal and the fluid intake adequate. However, if the kidneys cannot excrete the excess alkali, or if the fluid intake is limited, symptoms of alkalosis appear. Many authors have noted a definite correlation between the incidence of alkalosis and the presence of renal disease.¹⁹ Eisele,²⁰ in a series of 28 patients, found that 19 had pre-existing renal damage. Wilkinson and Jordan²¹ also noted antecedent renal impairment in a large number of cases in which alkalosis later developed. Alkalosis may appear in the absence of renal impairment and often does not occur in persons with renal disease.^{22, 23} Many writers could find no evidence of pre-existing renal disease in a majority of their patients.²⁴ Kirsner and Palmer²⁵ found that the depression in renal function noted during alkalosis is usually temporary, and that it is not permanently decreased by the prolonged administration of alkali.

Hypochloremia is a more frequent factor in the development of alkalosis than the ingestion of soluble alkalies. The chloride deficiency may result from a low salt intake, vomiting, nightly aspiration of gastric contents, the continued use of the Wangensteen tube and occasionally the ingestion of certain antacids such as calcium carbonate.²⁶ With the loss by hydrochloric acid the hydrogen ion and bicarbonate content of the blood increases, while the serum chloride, sodium, and total base are decreased. Factors which increase the tendency to alkalosis are massive hemorrhage²⁷ and the fluid balance and salt reserve of the body prior to the development of hypochloremia.²⁸ Recently we have seen a few cases in which vomiting was precipitated by massive doses of vitamin D, resulting in loss of hydrochloric acid and subsequent alkalosis.²⁸

The symptoms of alkalosis are often neglected by both the patient and the doctor and are ascribed either to the ulcer or to "nervousness." The patient becomes nervous and irritable and complains about the diet and medication. Soon he notices fatigue, headache, dizziness, and abdominal distention. Then he becomes depressed, worried, introspective, and fearful. Epigastric distress, dryness of the mouth and throat, itching of the skin, muscle pains, muscular twitchings, and aching in the jaws and teeth are some of the symptoms that may develop. The most important and

consistent symptoms, however, are the nausea and vomiting which causes a further loss of chlorides. As the vomiting continues the signs of dehydration appear, and soon the patient may develop tetany, delirium, anuria, coma, and, finally, death. Some patients develop a toxic psychosis, causing them to be committed to mental institutions. Most of these patients are poor surgical risks, and it is for this reason that alkalosis should always be considered before any gastric surgical procedure is undertaken, especially if a Wangensteen tube has been used to keep the stomach empty.

The diagnosis of this complication is, as a rule, fairly simple. The urine is alkaline, is of low specific gravity, and contains traces of albumin and a few casts. The chloride content of the urine is ordinarily below normal, and at times chloride may be absent. If the alkalosis is severe and the amount of urine is small, the reaction will be acid rather than alkaline. The carbon dioxide combining power of the blood plasma is increased, averaging about 80 to 90 volumes per cent. If the carbon dioxide combining power is over 100 volumes per cent, the patient will exhibit tetany with a positive Chvostek and Trousseau sign. The blood chlorides are depressed, and may be as low as 300 mgms. per cent. The blood urea nitrogen, creatinine, and uric acid may be markedly elevated, as in chronic uremia. The blood calcium is normal, but the blood phosphorus may be markedly elevated. The hemoglobin erythrocyte and leukocyte counts are normal but may be increased due to the dehydration.

At times it is difficult to distinguish between alkalosis and acidosis due to uremia. At the onset of this complication the carbon dioxide combining power will be greatly elevated, but, as the condition persists and the blood urea nitrogen and creatinine increase, the carbon dioxide combining power decreases until finally it is below normal. Chart I gives the laboratory data on a patient who, during alkalosis, developed anuria and eventually died. The patient had an elevated carbon dioxide combining power at the onset, but, as the blood urea nitrogen increased, the carbon dioxide combining power fell, and before death the picture was that of uremia with acidosis.

The treatment of alkalosis is fairly simple. If soluble alkalies are being used, they should be discontinued at once. To combat the dehydration, the patients should be given 2,000 to 3,000 cc. of physiologic saline intravenously for the first few days. If the patient has had pyloric obstruction, soluble vitamin B and especially vitamin C should be added to the parenteral fluid. Patients that are able to take food by mouth should be

given 5 to 10 grams of sodium chloride in excess of the salt present in the diet.²⁹ The patients who do not have pyloric obstruction make a rapid recovery. Alkalosis caused by pyloric obstruction is more difficult to treat because the patient cannot take food by mouth. These patients need glucose to combat the ketosis of starvation, fluids for the dehydration, saline for the loss of chlorides, and vitamins to substitute those lost by vomiting. The patient should receive, daily, 300 cc. of 2 per cent sodium chloride intravenously, followed by 5 per cent glucose. The vitamins can be added to the parenteral fluids. Each evening the stomach should be aspirated, and 150 to 200 cc. of physiologic salt solution replaced. We have found that replacing 150 to 200 cc. of 0.1 normal hydrochloric acid suppressed the formation of more acid. The patients should be watched for the development of edema. This may result from either too much fluid or too much salt. If the former, the total amount of fluids is reduced, and, if the latter, the saline solution can be discontinued. A few patients make an uneventful recovery but still show some increase in the blood urea nitrogen and creatinine. In these cases we have found that stopping the use of saline in the parenteral fluid and giving just 5 per cent glucose in distilled water causes a prompt return of the urea nitrogen to normal levels. The stools should be watched for occult blood, and if there is evidence of hemorrhage transfusions must be given at once. When anuria develops, the prognosis is very poor. At the University Hospital the mortality rate has been over 90 per cent. We have tried all the usual procedures, including washing the renal pelvis with warm water. We have not tried stripping the renal capsule, nor have we had an opportunity to test the method of washing the peritoneum with large quantities of fluid.³⁰

Other complications of peptic ulcer are perforation, subphrenic abscess, hour-glass stomach, and gastrocolic fistula. These are treated surgically and need not be considered. A complication that is seen rarely is the so-called cascade stomach. This complication is diagnosed by the radiologist. The causes of this condition are pressure on the greater curvature by gas in the transverse colon or splenic flexure, an extragastric mass, or a malignant tumor in the region of the cardia, or it may be "functional." Obviously this condition needs no treatment other than removing the cause, if possible.

Summary and Conclusion

In the past many of the complications of peptic ulcer have been designated as part of the symp-

tomatology of the disease because they occur with such frequency. These are the mental upsets, the recurring distress caused by over-activity of the stomach, and constipation. These complications respond to medical treatment but require patience and tolerance on the part of the physician. Pyloric obstruction is a frequent complication, and results more often from edema, spasm, or mild antral distortion than from complete organic obstruction. Pyloric obstruction should always be treated medically at first. If this condition is the result of organic obstruction, surgical therapy should be advised. Massive hemorrhage is treated best with the prompt-feeding regime and transfusions. The mortality rate with this regime is lower than any other used up to present time. Alkalosis is a frequent complication but is often overlooked by the physician. In the recent literature there is a tendency to treat alkalosis as a mild but interesting condition. Even though the treatment of this complication is simple, the end result may be very serious if the alkalosis is not recognized. Above all, the physician must remember that peptic ulcer is a psychosomatic disease, that it is often arrested but seldom cured, and that the complications usually result from a difficult patient rather than an intractable ulcer.

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MALARIA AS A POSTWAR PROBLEM IN IOWA

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Malaria is no stranger to the Midwest and to Iowa. There have always been occasional cases whose infection was acquired in malarious areas and discovered locally, and a number of cases have been reported whose infection was acquired locally. Now, in addition, there is a considerable number of returning ex-service men who will have recurrences of their malaria and will constitute a sizable reservoir of parasites for the infection of others. As a result, malaria will no longer be a rare disease in Iowa, and every physician will find it necessary to be well versed in its diagnosis and treatment. A good idea about the amount of malaria occurring at the present time and to be expected in the next year or so can be gained from the state laboratory report. The laboratory found 62 cases of malaria in the last six months of 1945 and 93 cases during the first two months of 1946.

The diagnosis of a typical malaria attack offers little difficulty. A typical paroxysm of vivax malaria consists of three stages: the chill, fever, and the sweat. The patient first has a chilling sensation over the entire body; the skin is cold, the teeth chatter, and there is uncontrollable shivering. The pulse is fast and weak, and there may be nausea and vomiting. This phase lasts about an

hour. During and following the chill the temperature rises rapidly to 104 F. and higher. In this stage the patient complains of a severe headache and a sensation of extreme heat. His face is flushed and pulse full. There may be epigastric distress, nausea and vomiting. Frequently the patient is delirious. The skin is hot and dry. Shortly after the peak of the febrile curve is reached, the patient begins to perspire and in a short time is bathed in profuse perspiration. The fever falls rapidly, the headache disappears, and the pulse returns to normal. Usually the patient sleeps to waken exhausted but otherwise feeling quite well. The sweating stage lasts from two to three hours and the entire paroxysm from eight to twelve hours.

The paroxysm of plasmodium malariae infection is quite similar to that of vivax. The rise of the temperature curve is usually less abrupt, the fall more rapid, and the total duration of the paroxysm is usually from four to five hours.

The cases of Plasmodium falciparum or malignant tertian malaria are more apt to be difficult to diagnose. Characteristically, Plasmodium falciparum malaria begins with a sensation of chilliness rather than a frank chill, has a prolonged and intensified hot stage and a lack of the marked terminal sweating. The fever curve frequently shows a prolongation of the fastigium, often with a primary fall and a secondary rise before returning to or toward normal. However, the fever may be continuous or remittent instead of intermittent. During the periods of remission there is less apt to be a return of the sense of well being that occurs with vivax and malariae infections. Defervescence frequently occurs by lysis rather than by crisis. Prostration and the tendency to delirium are more marked than in the other types. Nausea and vomiting are prominent in many cases, and the spleen is generally palpable and tender. The paroxysm in falciparum malaria often lasts from twenty to thirty hours.

If all the cases of malaria followed the above patterns it would not be difficult to recognize and treat them. Unfortunately, however, a few cases, occurring for the most part among recurrent and chronic types, will present atypical clinical pictures that will test the diagnostic acumen of the best clinicians. Recurrences are apt to occur shortly after the discontinuance of a course of atabrine given for suppression or when the individual is excessively fatigued, run down from another illness or debilitated from alcoholic excesses. It is the recognition of these unusual types that is going to be the real postwar problem as far as malaria is concerned. Physicians throughout the Midwest,

therefore, will find it necessary to familiarize themselves with all the diagnostic and therapeutic aspects of clinical malaria. They must develop the habit of thinking of the disease as a possibility in any fever of unknown origin or whenever anemia or splenomegaly is detected. It will not be sufficient to think of malaria during the anopheline seasons alone. The disease will also merit serious consideration in the differential diagnosis of the atypical clinical syndrome throughout the year.

Central Nervous System Manifestations

Probably the atypical forms most to be feared are those that simulate central nervous system conditions and are generally referred to as cerebral malaria. Mortality rates as high as 40 per cent have been reported in series of such cases treated when in coma. Prompt recognition and treatment are most necessary.

Coma is the outstanding symptom of cerebral malaria. It may come on suddenly or it may progress gradually, preceded by headache. A patient exhibiting symptoms for which there is little reason for concern may be seized within a few minutes by a progressive and uncontrollable rise in temperature to levels in excess of 108 F. Less often there is little or no fever. Malaria coma may easily be mistaken for diabetic coma or insulin shock. It may be diagnosed as uremia. As the coma develops, the combination of drowsiness and slurring of speech may lead to a diagnosis of acute alcoholism. Such a mistake would probably be disastrous. Morphine poisoning may be a confusing diagnostic consideration, especially if the pupils are small. Malarial coma is likely to be mistaken for the coma of cerebral hemorrhage, thrombosis or embolism. Coma due to a head injury must be considered in the diagnosis.

Headache may be the first and only symptom of malaria when seen by the physician. It occurs in all degrees of severity from a sense of fullness to severe pain. The entire head may ache or the pain may be localized to a single area. When associated with malaise and a mild fever it is easily seen how a diagnosis of sinusitis might be made. Generally, however, the headache is associated with some nausea, vomiting, and stiffness of the neck. In these cases meningococcic meningitis might be suspected. Clinically, the two diseases have much in common and without an examination of spinal fluid, a blood smear for parasites and a white cell count, it is doubtful that a correct diagnosis can be made. In malaria the spinal fluid will be found to be under increased pressure and without significant changes.

When first seen the malaria patient may be

having convulsions. Malaria due to plasmodium falciparum quite commonly gives rise to either clonic or tonic convulsions, especially in children. Convulsions in plasmodium vivax malaria are less common but do occur and are usually easy to control. The convulsions when due to falciparum begin as a rule with an already elevated temperature, usually from 103 to 105 F. Less often the convulsions begin with a normal temperature. When this occurs the prognosis is more grave. There is a wide variation in the clinical picture of successive cases. The convulsions may be clonic, clonic and tonic, or tonic alone and simulating tetanus. The patient may have but a single convulsion or may have continuous convulsions lasting many hours or until death intervenes.

Various localizing signs may be present in cerebral malaria. Probably the most striking of these is seen in malarial hemiplegia, paraplegia and monoplegia. Coma may accompany the paralysis and lead to a diagnosis of cerebral hemorrhage. The paralyzes most commonly occur in children in whom permanent changes may be left. Paraplegia of the lower extremities is probably due to damage in the spinal cord rather than the brain. Rarely the localizing signs are predominantly cerebellar. Simpson and Sogehill reported a case of malaria in which there were manifestations of cerebellar involvement with weakness, ataxia and dysmetria of the extremities. Accompanying the cerebellar syndrome there may be headache, vomiting and visual loss. DeVries reported a case of cerebral ataxia with hyperactive tendon reflexes, tremor, slurring of speech and nonconvergence of the eyes. Cases have been reported in which the symptoms were predominantly bulbar with difficulty in speaking and swallowing and facial weakness. Rarely a group of symptoms similar to multiple sclerosis may be presented. In one case of a large series a brain abscess was considered in the differential diagnosis. Aphasia occasionally occurs and memory of recent events may be lost. Psychic disturbances are not uncommon. An individual who would not commit suicide under normal conditions may do so during a malaria episode.

Gastro-intestinal System Manifestations

Practically every disease of the gastro-intestinal tract may be simulated by malaria. One of the more serious forms is that in which the patient enters in a state of general collapse and to which the name algid malaria has been given. Algid malaria, fortunately, is uncommon and is usually due to plasmodium falciparum. In this type of malaria the pulse is rapid and weak and the skin is pale and cyanotic. Although the skin is cool, the

rectal temperature is usually elevated. By all the signs and symptoms the patient appears to be in medical shock. Occasionally an algid state will develop in a patient following excessive sweating in an otherwise uncomplicated case of malaria. As a rule, however, algidity tends to occur in debilitated patients and in those that have lost considerable fluids through diarrhea or vomiting.

Choleric form malaria is a striking form of the disease and usually terminates in an algid state. The typical symptoms of cholera-vomiting, abdominal pain and a violent diarrhea develop. The patient becomes increasingly dehydrated. The stools simulate the rice water stools of cholera. Muscular cramps and suppression of urine may occur as a result of fluid loss. Cholera facies appear and the patient goes into a state of collapse similar to that seen in cholera.

Malaria cases simulating acute bacillary dysentery are less severe than the choleric form type and are less likely to become algid. The usual symptoms are fever and acute diarrhea with mucus and blood. Rarely a hemorrhagic diarrhea occurs in which the stools contain large amounts of blood.

Gastritis frequently occurs in malaria and is usually mild; but it may be severe and a malignant condition. Vomiting is the outstanding gastric symptom and may be cerebral in origin rather than gastric. It is not uncommon for the vomitus to contain blood. A moderate amount of epigastric distress usually accompanies the vomiting. Other malaria cases complain of indigestion without vomiting. If there is little fever a diagnosis of gastric or duodenal ulcer might be made. The diagnosis of malaria may be suggested by the periodicity of the symptoms.

A large tender liver may be seen in malaria, most commonly in cases due to *plasmodium falciparum*. There may or may not be a mild jaundice present. Liver abscess may be simulated. As a rule the symptoms are subacute or chronic but occasionally acute pain occurs in the liver and gallbladder region and may lead to the diagnosis of gallbladder disease.

In connection with gastric and hepatic malaria, a syndrome known as bilious remittent fever should be mentioned. In this form of the disease the chief symptoms are nausea and profuse, continuous vomiting. Jaundice appears about the second day. This is somewhat earlier than in yellow fever and later than in blackwater fever. Epigastric distress and liver tenderness are marked, and hemorrhage from the stomach may occur with coffee ground vomitus. The patient has a high fever, usually of a remittent rather than a continuous type.

In a rather large number of cases (4 per cent in one large series) symptoms develop that simulate an acute surgical abdomen. The condition most commonly simulated is an acute appendicitis with sudden onset of pain, tenderness and rigidity in the right lower quadrant. The possibility of a co-existing acute appendicitis must be kept in mind. Ravdin and North operated thirteen patients in whom the diagnosis was in doubt and found ten acute appendices. They concluded that the differential diagnosis between malaria with acute nonoperative abdominal symptoms and malaria with an accompanying acute surgical lesion of the abdomen is not only difficult but even impossible in some cases. Other surgical conditions that may be simulated are gallbladder disease and acute pancreatitis. The symptoms may resemble those of acute peritonitis with generalized abdominal pain and tenderness, nausea and vomiting, fever and rapid pulse. Cases have been reported in which intestinal obstruction was simulated.

Genito-urinary System Manifestations

It is not uncommon for symptoms referable to the genito-urinary tract to be the ones of major importance in the clinical picture. A slight or moderate albuminuria is frequently present in acute malaria but is usually not significant and does not contraindicate the use of antimalarial drugs. Occasionally the albuminuria is excessive and may be associated with fluid retention. Malaria patients frequently complain of low back pain, urinary frequency, urgency and dysuria. When associated with chills, fever and costovertebral tenderness a pyelonephritis or other urinary tract involvement may be simulated. Orchitis due to malaria has been described. The symptoms are pain in the testicles of sudden onset, severe tenderness and slight swelling.

The condition known as blackwater fever, while a complication rather than an atypical form of malaria, is so closely allied to the conditions described in this paper that it is included here. Blackwater fever, one of the most dangerous complications of malaria, is essentially an acute intravascular hemolysis with hemoglobinemia and hemoglobinuria. It is characterized by profuse vomiting, early jaundice, chills and the passing of dark red urine. As a result of the red cell destruction an anemia develops rapidly. Blackwater fever usually occurs during the course of chronic *falciparum* malaria. The taking of quinine has long been thought to be the chief precipitating factor although chilling, exposure and the excessive use of alcohol are also regarded as possible causative factors.

Respiratory System Manifestations

A large number of malaria patients offer respiratory complaints. The most common of these are dyspnea, cough, rhinitis, pharyngitis and chest pain. Upon examination one may find basal moist râles, wheezing respirations and migratory areas of dullness. Pleural friction rubs have been heard. In one series of malaria cases a patient was diagnosed as pleurisy with effusion. In this case diminution of breath sounds and dullness were elicited over the left lower lobe while sibilant and sonorous râles were audible over the right lung. Another case was mistaken for a bronchopneumonia with cough, chest pain, a thick mucoid sputum, basal moist and crepitant râles, and a history of fever for several days unaccompanied by chills. In another series of cases there were thirteen in which a respiratory disease was made. Eight of these cases were thought to have virus pneumonia, four simulated pleurisy, and one was believed to have a possible lung abscess.

Miscellaneous Manifestations

The eyes may be affected, chiefly in malignant tertian malaria. The patient may complain of a fogging of vision that clears in an hour or so, or which is occasionally persistent and may result in partial blindness of one or both eyes. Retinal and choroidal hemorrhages and edema occur. Harley and Kaiser reported a small series of cases of dendritic keratitis in which there were no other symptoms of malaria.

Skin manifestations may be seen in malaria. Purpura, urticaria, and angioneurotic edema have been described.

Treatment

Once the diagnosis of malaria has been made, the treatment should not be difficult. In general the plan of treatment, based on the findings of the Malaria Commission of the League of Nations, is to employ the "short term" therapy which consists of treating each attack very vigorously as it occurs and recognizing the fact that it is the patient's own evolution of immunity that really effects the cure. Of the two principal specific agents, atabrine and quinine, the Board for the Coordination of Malarial Studies of the National Research Council has established atabrine as the preferred drug for use by the armed forces. This decision was based on wide experience that tended to show that atabrine was safer than quinine, as effective in controlling an attack and that the interval between attacks was longer when atabrine was used. In Circular Letter No. 153 from the Surgeon General's Office (September, 1943), was stated the

dosage that had proved to be most effective. This consisted of atabrine dihydrochloride (3 grains) and sodium bicarbonate (15 grains) given by mouth every six hours for five doses to be followed by 1½ grains of atabrine three times a day for six days. As a rule this regime will be sufficient to control a paroxysm; but occasionally a patient will require that the lesser dosage be continued for several more days.

If quinine is used, the recommended dosage is 15 grains three times a day after meals for two days followed by 10 grains three times a day for five more days. A third antimalarial drug, plasmochin, was employed extensively in World War II. It was given after the course of atabrine or quinine in the attempt to prevent relapses by reason of the gametocidal properties of the drug. However, plasmochin was shown to be ineffective in preventing relapses and, furthermore, causes so much discomfort that its use is hardly justified. Many more antimalarial remedies have been described and tried but none has proved to be more effective than atabrine and quinine.

The treatment of the atypical forms consists of the administration of antimalarial drugs plus the control of the atypical symptoms. When the patient has a cerebral or other fulminating form of the disease, it is mandatory that atabrine or quinine be given parenterally at the earliest possible moment. Some men follow the practice of giving the first dose of antimalarial drug parenterally whenever the diagnosis of falciparum malaria is made. Atabrine may be given intramuscularly in much the same dosage as the oral course. Quinine may be given either intramuscularly or intravenously. If the latter method is used, the injection must be given very slowly. Other measures to be employed are the reduction of hyperpraxia by the cold pack, administration of fluids to include plasma and blood, and the return to a high carbohydrate, high protein, high vitamin diet as soon as possible.

Malaria is and will continue to be a postwar problem for the physicians of Iowa. It is a problem because it is a disease with which we are unfamiliar. It will no longer be a problem when each physician keeps it in mind as a possibility in the diagnosis of his cases.

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Discussion

Dr. Herman J. Smith (Des Moines): A generation ago medical textbooks spoke of syphilis as "the great imitator." The variety of forms which may be assumed by malaria makes us wonder whether the plasmodium may not be succeeding the *Trepone* as the great masquerader among medical villains. Dr. Paulus has rendered a distinct service by calling attention again to the fact that malaria may cause disease in almost every organ system of the body.

Many of its atypical manifestations have not been satisfactorily explained. Not every case of headache, delirium, or nuchal rigidity in a malaria patient is due to cerebral malaria. We glibly refer to some of these cases as "toxic" headaches, "toxic" delirium, and so on. I am not at all sure that this labeling clarifies our thinking about the pathologic physiology of the disease, but certainly we have not seen much true cerebral malaria except in falciparum infection. Yet we see great numbers of these "toxic" patients who are infected only with the vivax strain.

In this connection, it is worth remembering that falciparum infestation usually dies out within six months after the first clinical manifestations, while the patient with benign tertian malaria continues to have recurrences for two years or more. It was a common experience in the Marine division with which I served in the South Pacific to see patients who showed mixed infections with falciparum and vivax plasmodia during their first clinical attacks, only to have subsequent relapses which clinically and in the laboratory were pure vivax or benign tertian malaria.

Field experience served, too, to re-emphasize an old observation about malaria that any unusual physical stress or exposure is apt to light up an old, latent malarial infection, even after years of quiescence. Our surgeons in field hospitals learned to expect a bout of chills and fever during convalescence from a simple appendectomy. Even the young marine lieutenants who would lead a two or three day jungle patrol soon came to know that it was wise to double the usual suppressive dose of atabrine for their men for several days, lest the rigors and exposure of the patrol action cripple the detachment without a shot being fired by the enemy.

The most frequent of the atypical manifestations of malaria in our division were headache and gas-

tritis, both of which Dr. Paulus has emphasized. These may occur as chronic complaints in afebrile patients, and periodicity may be lacking. The frequency of a positive Kahn test in malaria deserves emphasis. Dr. Paulus has pointed out that malaria may mimic an acute surgical condition in the abdomen. I have seen two cases with a pleuritic type of pain referred to the top of the left shoulder as their only complaint; both had acute malarial infarcts of the spleen with diaphragmatic irritation.

The fact that the veteran who presents himself to us has not been in a malarial area for many months and has had no previous attacks of the disease should not be permitted to throw us off guard. I developed my own first clinical attack of malaria nine months after leaving a malarial area and stopping suppressive atabrine therapy, and I have seen the disease appear for the first time in others up to eighteen months after the last previous exposure. Dr. Dietrich Haines informs me that he has seen one case appear for the first time two years after leaving a malarial area.

Dr. Paulus is to be congratulated for giving us a comprehensive picture of the postwar problem posed by malaria. It should serve to remind us that in this disease, as in many others, the most valuable diagnostic aid is a high index of suspicion on the part of the physician.

Dr. Kenneth M. Brinkhous (Iowa City): Doctor Paulus has called our attention to the increasing incidence of malaria and to the occurrence of many so-called atypical clinical forms. I have been asked to discuss some of the laboratory aspects of this disease.

First of all, it is important to emphasize that the malarial parasites should be demonstrated before a definite diagnosis of malaria is made. Ordinarily, this is done in the thick blood film rather than the thin film. The thick smear is preferable as one can examine a fairly large volume of blood in a short time. In many attacks there are so few plasmodia in the peripheral blood that they cannot be found at all in the thin smear but are found readily in the thick film. Usually, thirty to fifty times more blood is examined in the thick smear than in the thin smear. In making the thick smear, three to five drops of finger tip blood are placed near one end of a slide in an area about the size of a dime. The corner of another slide can be used to make a puddle, or thick smear, of these drops. There are a few precautions that should be observed. The slides should be new and clean; otherwise, the blood film may not adhere to the slide. Also, the film should not be too thick, or it will crack and peel. And the slide should dry away from dust or insects; it is convenient to allow it to dry in a Petri dish.

The second point that I would like to make is that the increased incidence of malaria in Iowa is due largely to relapses of vivax infections in returning service men. Twenty or more recurrences are not unusual. However, many individuals may not have

their first attack of vivax malaria for many months after release from service; that is, many months after discontinuance of suppressive atabrine therapy. In addition, of course, vivax infections acquired locally have to be considered.

Falciparum malaria, in contrast to vivax malaria, does not tend to relapse. And it does not tend to develop months after discontinuance of atabrine therapy, as in the case of vivax infections. Hence, falciparum malaria will usually be in individuals who have returned recently from endemic areas.

The third point I would like to bring up is the high incidence of false positive reactions in the serologic tests for syphilis in patients with malaria. False positive reactions may develop as early as the premonitory stage, and may persist for as long as four to ten weeks after the clinical attack. In fairly large series of cases of malaria in nonsyphilitic individuals, it has been found that as many as 45 per cent of the cases developed either positive or doubtful reactions.

Finally, I would like to point out that one of the causes of death in malaria is rupture of the spleen. In acute malaria, the spleen is enlarged, its capsule is stretched and very tense, and the pulp is dark and extremely soft. The pulp practically runs from the cut surface. Such an enlarged spleen may be ruptured easily, either from trauma or possibly spontaneously. I have seen cases in which I believe the splenic rupture occurred during physical examination of the patient, as a result of vigorous palpation of the spleen.

OBSTACLES IN THE ORTHOPTIC TREATMENT OF SQUINT

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In the short time allotted to this paper it is obviously impossible to discuss orthoptic treatment in its entirety; consequently, only a few of the major obstacles which confront the orthoptist will be reviewed.

According to Lancaster¹ orthoptics deals with defective habits of seeing, defective habits of binocular vision and defects of ocular motility. "Orthoptic treatment," he says, "is the art of teaching patients, children and adults how to use their eyes properly." (These two definitions, I should say, are very inclusive.) Of all the anomalies exhibited by the average squint case, the orthoptist is most concerned with those associated with fusion, for without fusion a cure cannot be obtained.

Cures

It might be well at this time to analyze what we mean by a cure in squint. Costenbader² has

outlined a very workable classification which allows for various grades, from a complete cure to a cosmetic cure only. It is as follows:

Grade 1: Straight eyes, normal vergences, good fusion and stereopsis carried into reading and other daily visual tasks.

Grade 2: A small residual heterophoria, good fusion stereopsis on instruments, but varying grades otherwise.

Grade 3: A small amount of heterophoria, fair vision, fair fusion on instruments, but little carried into daily tasks.

Grade 4: Small amount of heterophoria, no fusion or visual requirements—a cosmetic "cure" only.

Obstacles to Training

Many obstacles will confront the orthoptist in the routine treatment of squint, and it is upon his ability to overcome these that the final results depend.

The most frequently listed causes of failure are: (1) amblyopia; (2) suppression; (3) abnormal retinal correspondence; (4) vertical imbalances. One other that is scarcely if ever mentioned, which is certainly a major obstacle, is poor co-operation of parents or child.

Amblyopia

For all practical purposes in dealing with squint, a corrected vision of around 6/12 or less in the deviating eye may be classed as amblyopia. To better understand the development of amblyopia let us go back for a moment and review the development of the visual functions. The macula, as such, is not present at birth and does not make its appearance until about the sixth month. The vision at this time has been estimated to be about 6/300, improving rapidly, and at the age of two or thereabout is probably close to 6/12. Vision of 6/6 or normal acuity is not present until about the age of 5 years. It is unfortunate that most of our squints appear during this developmental period, for we have suppression starting then in an eye which has really never yet attained its maximum visual acuity. This cessation of development alone would be problem enough, but not only is there no further improvement of acuity; there is actually a very definite and rapid loss of that which the child has already acquired.

Treatment of Amblyopia

If proper treatment is started while the eyes are still in this stage of physiologic development, in other words before the age of 5 or 6, the return of vision is usually quite rapid until it reaches the point it had attained prior to the beginning of suppression. Following this, while recovery is very satisfactory, in most cases it is much slower.

If the child, however, is neglected until he has reached the age of 8 to 10, the acuity has probably retrogressed to about 6/30 or less by this time and the eyes have gone through the period of most efficient development. We now have more vision to regain and it must be done at a much less favorable time.

With this brief review of the physiologic development, it is easy to understand the importance of early institution of remedial measures.

The treatment of amblyopia requires very little time or equipment on the part of the orthoptist and certainly there is no excuse for its neglect. Following refraction and proper fitting of corrective lenses, constant and complete occlusion of the fixing eye should be carried out for an indefinite period of time, depending upon the rapidity with which the vision returns.

There is considerable controversy as to how long covering should be continued before relinquishing hope of any further return of visual acuity. Most authorities seem to feel that a fair period of occlusion is from three to six months in the average case. Longer periods than this have proved to be justified in many cases, but certainly their prognosis is much worse.

In a few cases where the amblyopia is profound, constant occlusion at first may be a little too severe to allow ordinary activity. In these cases it may prove advantageous to cover the eye for short periods of close work, such as coloring and cutting pictures, stringing beads, etc. When, however, there is enough improvement to allow, the occlusion should be constant.

There is one other very important reminder in the treatment of amblyopia. As long as there is any deviation present, the amblyopia may return; consequently, frequent checking of vision should be done.

The question of how much vision is necessary before fusion exercises can be started is a debatable one. Burri³ has developed fusion with as little as 20/200 in the poor eye. "Many," she says, "get fair fusion although poor stereopsis with 20/65, and with 20/40 little should stand in their way toward good binocular vision."

In spite of all our knowledge and theories, it is difficult to understand why some amblyopias respond readily to occlusion, while others do not; likewise, why one child with a severe amblyopia will develop fusion and one with normal vision will not.

Suppression

To understand this next hindrance to treatment, we must again go back to the stage of so-

called physiologic development. We know that under twelve months of age there is very poor co-ordination of a baby's eyes and little, if any, binocular single vision. The various attributes such as fusion, accommodation, convergence, etc., are all present at birth in a normal child, and their development is more or less automatic, so to speak. In the squinting child, while these same attributes may be present, or at least potentially so, their development must receive some outside stimulation.

As the accommodation and convergence association begins to develop, the child soon learns that by exerting his accommodation the vision is much more acute; he also learns that by converging, less effort is required and better vision results. Up to this point everything is as it should be. If, however, this child has a high degree of hyperopia, which most of the accommodative squints do, the amount of accommodation required for clear vision is markedly increased, and along with this is an overexertion of convergence to the place where diplopia ensues. To overcome this disagreeable condition, the child calls forth one of his inherent abilities, namely suppression. Now so far as he is concerned, everything is satisfactory; he has good vision with minimum effort and discomfort. The fact that one eye now deviates at a different angle than the other is of no immediate concern to him.

As in amblyopia, the earlier this phenomenon appears and the longer it is allowed to go untreated, the more fixed it becomes. Suppression, unlike amblyopia and abnormal correspondence, may return to cause trouble at any time even though normal vision, fusion, and stereopsis are all well developed. This little understood anomaly is present in about 50 to 80 per cent of convergent strabismus cases.

The diagnosis, of course, is simple and can be made on most of the binocular instruments.

Treatment of Suppression

Here again, as in amblyopia, the occluder is probably one of the most useful aids in overcoming this condition. Various exercises have been developed to help combat suppression, many of them depending upon some ingenious form of stimulation such as movement, flashing lights, bright colors, etc. All aim to stimulate the macula and are probably most easily accomplished on one of the major amblyoscopes.

Abnormal Retinal Correspondence

The most important and least understood phenomenon appearing in squint is that of abnormal retinal correspondence. It is known by a variety of names such as false projection, false macula,

anomalous projection and many others. It has been defined in almost as many ways. For simplicity's sake, let us say that it is a condition in which the macula of one eye is used with a non-macular area of the other eye, and a degree of single vision is maintained.

Burian⁴ states the only satisfactory explanation is that derived from the methods of "exact subjectivism" (Tschermak). According to this theory the relative localization of a body in space is determined by an inherent quality in each retinal element. Each retinal element then has a subjective visual direction all its own. The existence of these individual subjective directions causes objects in space to be localized according to the retinal elements stimulated rather than to their objective position in space.

Binocular single vision is based on the simultaneous stimulation of elements in the two retinas having the same common visual direction. These elements in the two retinas are designated as corresponding retinal points and represent the center of retinal areas which have the same relative position in the two eyes. The foveas of the two eyes are the best example of corresponding points.

This normal correspondence, which is stable in a person with normal binocular functions, is not so stable in the person with abnormal eyes. As we already know, the eyes of a child adapt themselves very easily, and this retinal correspondence is quite flexible. Retinal elements which are normally noncorresponding can then acquire a common visual direction and maintain it if it be advantageous. This peculiar characteristic of the retina to receive images on disparate or noncorresponding points, to project them in the same visual direction, and to convey a single impression is the essence of abnormal retinal correspondence.

Unlike amblyopia and suppression, abnormal correspondence is difficult to diagnose, especially if one does not have access to some type of major amblyoscope.

The first step in diagnosing abnormal correspondence is an accurate measurement of the angle of squint. This can be accomplished by whatever method the orthoptist chooses, the cover test and the synoptophore probably being the most reliable. Two dissimilar targets are now placed in the slots and the tubes of the major amblyoscope are set at the angle of squint. If normal projection is present, the two target pictures will be superimposed. If, however, false projection is present, the two pictures will be superimposed at some angle other than the one corresponding to the squint measurement, an error of 5° being allowable.

Treatment of Abnormal Retinal Correspondence

It is practically impossible to treat anomalous correspondence without some type of major amblyoscope. To re-establish a normal projection both foveas must be stimulated at the same time and the patient must be made aware of a diplopia. Following this he must be taught to superimpose the two targets and at the same time maintain foveal fixation with either eye. Much time and patience will be required, for the child will repeatedly attempt to turn his eye to the position where the extra foveal area will again receive the image.

Other than instrument training the only treatment is occlusion. Here again it is very useful, not only because it prevents further development of anomalous correspondence, but because it quite often helps to produce a diplopia.

It is very important that normal correspondence be proved before fusion exercises are started; otherwise, the bad habit will be so deeply impressed that a cure will be impossible. This same warning holds true before attempting surgery.

The incidence of false projection in convergent squint is about 50 to 60 per cent, so it behooves all of us to be on the lookout for this anomaly.

Vertical Imbalances

Vertical imbalances are probably the least important of the obstacles encountered in the treatment of squint, even though White and Brown⁵ report that two out of every five squint cases exhibit a vertical deviation. In my limited experience the incidence has not been this high or else many vertical anomalies have been overlooked.

There is considerable variance of opinion as to how much of a barrier a vertical deviation is in the orthoptic or surgical treatment of squint. Feldman⁶ considers it a "grave complication" and reports only 10 per cent were cured in his private clinic. On the other hand many feel that adequate treatment of the horizontal error and proper use of prisms is all that is necessary.

Before closing a word concerning the cooperation of the parents and the child should be given. There is absolutely no doubt in my mind that the most common cause of failure is an uncooperative attitude of the parents. I do not believe that out of fifty cases of squint half of them ever return for treatment after the glasses are prescribed, especially if the improvement from them is noticeable. No matter how carefully this condition is explained and how explicit the directions, the majority of parents are not enough concerned to put forth the time and effort necessarily required to give these cases adequate treatment.

Summary

It has been my endeavor in this paper to review obstacles confronting one who is attempting to do orthoptics, why and how these anomalies develop, and a little concerning their treatment. I realize there is nothing new or different in anything that has been said, but if any of you have received any stimulation at all for treating these unfortunate youngsters, I shall feel that this has been worthwhile.

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Discussion

Dr. R. J. Stephen (Cedar Rapids): In discussing such a paper, there is need to repeat and to do so is only to emphasize Dr. Gardner's points. *Amblyopia* may be defined as that condition of dull or defective vision unaccounted for by any detectable organic changes in the eye. This condition probably accounts for more cases of squint than any other. Next, *suppression* is as the word implies a suppression of the visual image in one eye in order to prevent diplopia in squinting eyes. *Abnormal retinal correspondence* is an anomaly that is as yet not well understood but is present in a large percentage of convergent strabismus cases. This condition is also termed anomalous projection, false macula, and false projection. As Dr. Gardner defined it, it is a condition in which the macula of one eye is used with a nonmacular area of the other eye and thus maintaining a degree of single vision. *Vertical imbalance*, well defined by Dr. Gardner, needs no additional remarks. *Aniseikonia*, that condition of unequal sized retinal images, may be considered also as an obstacle in orthoptic training. Non-cooperation is certainly a major obstacle in orthoptics.

Too much emphasis on beginning orthoptic training when the patient is young is never the case. As Dr. Gardner stated, this training should be started when the eyes are developing. Most authorities agree that training should commence when the child is 2 to 5 years old. This must be done in order to properly develop the fusion centers. Fusion is the cerebral association by which images received on both retinæ are combined to form a composite picture. To me the development of fusion is the most important and the hardest obstacle to overcome. Without fusion, the results are uniformly bad.

F. A. MacNeil of Winnipeg, Canada, in the round table discussions on the subject of squint, Canadian Medical Association Meeting at Winnipeg, Canada, June 25, 1941, says that since the establishment of an

orthoptic department at the Children's Hospital in Winnipeg, the handling of squint cases has been very much facilitated. This is cited to emphasize that the obstacles met in orthoptics are more easily overcome in clinics than in private practice.

To further augment the above statement, let me quote Dr. P. Jameson Evans of Birmingham, England: "I strongly maintain that indications for muscular exercise are best carried out in a separately organized orthoptic department under the care of specially trained instructors. To those who find no good in orthoptic training, I would say the fault is in ourselves."

John P. Jordan, M.D., Los Angeles, Calif., stated: "The value of orthoptic training properly carried out has been affirmed by a sufficient number of intellectually capable and unimpeachably honest ophthalmologists as to be undebatable." (From Transactions of the Pacific Coast Oto-Ophthalmological Society, 1940.)

In the American Journal of Ophthalmology, May, 1943, Arthur Linksz, M.D., Hanover, N. H., of the Dartmouth Eye Institute, says: "I wish to anticipate one of the most frequent questions that is asked of one taking a stand for orthoptics, namely, 'Why is there no consensus of opinion as to its value?'"

Bielschowsky did not think too much of orthoptics; Chavasse had similar ideas. Dr. Linksz, when asked if he believed in orthoptics, answered, "Do I believe in education?" One must have the functional approach to habit and to performance in order to believe in orthoptics.

It is not necessary to quote statistics on the number of cures, especially those reported by British ophthalmologists. Their cure percentages are unbelievably high and do stimulate more interest in this work than in former years.

The end result, in reviewing the literature, makes anyone more convinced that even though the obstacles are numerous and difficult to overcome, the effort is well worth-while, and a large percentage of patients turn out to be happy boys and girls without the inferiority complex that otherwise would be their lot.

In conclusion, the solution to the successful treatment of any ailment of the human body lies in the closest cooperation of not only the internist, surgeon, pathologist, neurologist, pediatrician and ophthalmologist, but also of the patient, relatives, and friends of the patient. This is especially true in orthoptics.

PSYCHIATRIC CASE REPORT

Howard V. Turner, M.D., Des Moines

It is the understanding of the writer that there is reasonable expectation that the psychiatric casualties of the war did not end with the cessation of hostilities, but rather, the occurrence of "service

connected" psychiatric disorders may be expected to occur in even greater frequency during the coming few years. Since these men will be out of the service many of them will first be seen by private practitioners. The following case history is presented, therefore, as an example of a type of reaction which can be said to be "service connected."

Chief Complaint: "Stage fright" when called upon by a teacher to rise and relate his lessons; the patient suffered from extreme tension, spasm of throat muscles, inability to speak and other symptoms of fear.

Present Illness: The chief complaint had been present for about three weeks. It appeared after the patient had matriculated in professional school. There were no other complaints except an increasing sense of anxiety, due to the realization of the impairment of his efficiency by his chief complaint, which eventually would influence his chance of graduating.

Past History: The patient made the usual childhood and adolescent adjustment without clinical evidence of neurosis. In high school he frequently engaged in public speaking and amateur histrionics. He felt at home speaking on the stage and enjoyed it. After graduation he attended a liberal arts college (not graduating because of economic reasons) where he was called upon frequently in large classes without symptoms. After leaving college and securing employment he married and (although childless for four years) enjoyed a happy life. When the country went to war he was selected, and as the result of energy, intelligence, and good physique was commissioned in the ordnance department of the army. He was required after commission to teach large groups of men, command troops, and give orders, all of which he did without symptoms in both the United States and the European Theater. He was overseas for two years and saw some degree of combat.

His personal feeling during the early part of his training and combat experience did not appear to undergo any change. He remained faithful to his wife and associated with companions who had the same tastes and beliefs as himself. However, during the later part of his overseas experience he began drinking excessively and also noted the appearance of asocial (withdrawal) tendencies and moderate irritability. This irritability was much more prominent during drinking bouts, and on several occasions resulted in brawls and fights.

About four to six months after the appearance of such symptoms he was returned home and soon was discharged from the army. He immediately established a home and availed himself of the G. I.

Bill, matriculated in professional school which he had desired for a long time, and, in fact, was preparing himself for legal work when economic necessity parted him from school. He confined his social activities to school and family, and after about two months his symptoms began.

Physical examination was not helpful. The patient was a well-nourished 30 year old white male, cooperative throughout the examination. He was six feet, two inches in height and weighed 180 pounds. The head was of the usual size and shape, dolichocephalic, without masses, tenderness, or exostosis. EENT examination was negative. The chest was sthenic in type, equal in development and expansion. Percussion and auscultation were normal, as was the cardiovascular system. The abdomen was scaphoid in shape without masses and without areas of tenderness. The genitalia revealed normal male development. The extremities were symmetrical with no hyperaesthesia, paresis, or paralysis. On neurologic examination the deep reflexes were present and equal. No pathologic reflexes were elicited, and sensory examination revealed pathways to be intact. Vibratory and position sense was intact. Co-ordination tests were performed satisfactorily. Fundiscopic examination did not reveal evidence of pathologic change. Pupils reacted equally to light and accommodation. The consensual reflex was present. Examination of the cranial nerves revealed no evidence of pathologic change.

Discussion

The writer believes that this patient began to develop his difficulty in the latter part of his overseas experience. He was subjected to traumatizing experiences over a sufficiently long period of time to develop strong aggressions. He was securing some expression of these aggressions in his periodic alcoholism and irritability while overseas. Upon his return home he was placed in pleasant, non-traumatizing surroundings. His home life was happy, he had no need to "fight" to obtain a job; his matriculation was accomplished easily. In other words, his aggressions were unable to express themselves. They chose the earliest opportunity offered—the professor who called upon him. It is apparent that a student cannot express his aggressions directly against his teachers and survive as a student, so in this case a strong repression took place which resulted in conversion into hysterical reaction.

This type of case may or may not appear with any frequency in the future; however, other men will undoubtedly develop comparable reactions. There will be much variation in the symptomatol-

ogy presented and the severity of those symptoms. The above case is probably one of the milder and more restricted in its characteristics. It is to be expected that the symptoms presented in each case will depend upon the sum of the inheritance and the life experience of each individual. Therefore, each case for successful analysis and treatment will require study in the manner of the "life chart" of the patient.

**College of Medicine
State University of Iowa
CLINICOPATHOLOGIC
CONFERENCE
November 11, 1946**

Summary of Clinical Record

A married white female, 26 years old, was admitted to the University Hospitals Feb. 20, 1946. At the age of 11 years she had had rheumatic fever and was confined to bed for six months. A mild recurrence had occurred at the age of 15 years for which a rest of one month was ordered. At the ages of 20 and 22 years she had undergone pregnancies with no complications and no cardiac symptoms.

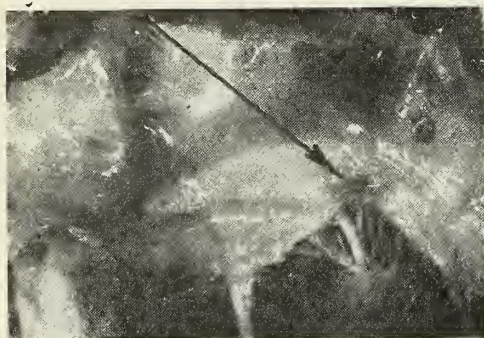


Fig. 1. Mitral valve, showing healing vegetation.

In July, 1945, she became ill with chills, fever, malaise, profuse diaphoresis, nausea, and anorexia. Agglutinins for *Brucella* were demonstrated in her blood, and a cow which was suspected of having brucellosis was sold from the farm. The symptoms continued until October, 1945, and then subsided. The patient had lost about twenty pounds during the three and one-half months. The agglutinins had disappeared from the blood serum by November, 1945. Late in October, 1945, pains appeared in the muscles and joints.

The right hip, right knee, left knee, left ankle, and left shoulder were successively involved by painful swelling, although redness was not noted. There were chills, fever, and sweating.

In November, 1945, the patient was admitted to another hospital where blood cultures were obtained and yielded an alpha-hemolytic streptococcus, Type S.B.E. Penicillin was administered at two-hour intervals, intramuscularly, 240,000 units per day for over 20 days. Then the dose was changed to 300,000 units every 24 hours intravenously until Jan. 21, 1946. The dose was then increased to 600,000 units daily. Three courses of sulfadiazine, 1 gram every 4 hours for 10 days, were also given. The blood cultures remained positive.

On admission to the Medical Service of the University Hospitals, the patient appeared to be

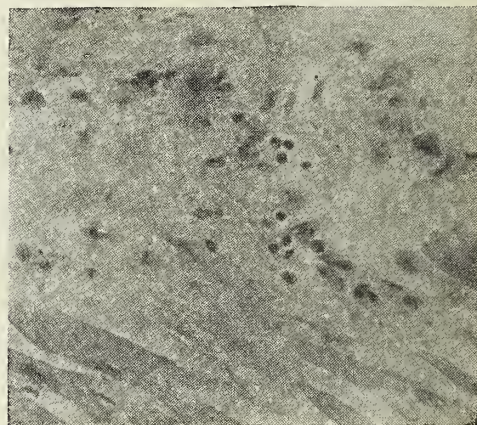


Fig. 2. Focal area of nonspecific chronic myocarditis.

well nourished but chronically ill. The skin was warm. No petechiae were seen on the skin and mucous membranes. There was no lymphadenopathy. The finger nails exhibited an abnormal forward curvature and the bases felt springy. The peripheral pulses were bounding in character. The heart action was definitely increased over normal and both the right and left ventricles were unusually accessible to palpation. The apical impulse was just outside the mid-clavicular line. No thrills were felt over the precordium. The cardiac rhythm was regular. A loud to-and-fro murmur was heard at the base of the heart and the systolic murmur was transmitted to the carotid arteries. In addition there was a pulsation in the supra-sternal notch which was the site of a systolic thrill. A pistol shot sound was audible over the femoral arteries, and Duroziez's sign was elicited. The blood pressure measurements varied from 162/6 to 120/30. The spleen and liver were not enlarged. There was no peripheral edema.

Thirteen urine specimens were examined and 7 contained albumin, from a trace to 3+. No erythrocytes or casts were detected in the sediment. The hemoglobin concentration varied from 10 to 11.5 grams per 100 cc. Blood counts were reported as erythrocytes 3.71 millions and leukocytes 9,000 to 12,350 per cu. mm., with normal differential counts. The sedimentation rate (Westergren) was 109 mm. and 95 mm. in 60 minutes, on two occasions. Three stool specimens exhibited no significant test for occult blood.

An x-ray film of the chest was interpreted as follows: "The aortic knob is prominent for a patient of this age. The lung fields are clear. M.R. 5.5 M.L. 9.8., transverse 28, D.R. 0.55. Impression: cardiac enlargement with prominent aortic knob."

Four electrocardiograms taken during the pe-

riod of hospitalization showed essentially the same findings: left axis deviation, displaced ST segment in Leads I and IVF, with the T waves in Leads I and IVF varying from positive to negative.

Blood cultures were studied in the Department of Bacteriology and reported as follows: Feb. 20, 1946—alpha-hemolytic streptococci, resistant to 1 unit of penicillin, very slightly susceptible to ten units; Feb. 21 (2 cultures)—alpha-hemolytic streptococci; Feb. 22—alpha-hemolytic streptococci; Feb. 23—alpha-hemolytic streptococci; Feb. 25—alpha-hemolytic streptococci; Feb. 27—alpha-

hemolytic streptococci; Mar. 13—no growth; April 4—no growth.

During the first five days in the hospital, the rectal temperature fluctuated daily between 99.8 and 102 F. The administration of penicillin was begun on February 25 in dosages of approximately 1,000,000 units daily by continuous intramuscular drip. On February 28 the dose was changed to 2,000,000 units daily. During a period of 18 days the patient received approximately 34,000,000 units of the drug. Forty-eight hours after penicillin was begun the temperature declined to nor-

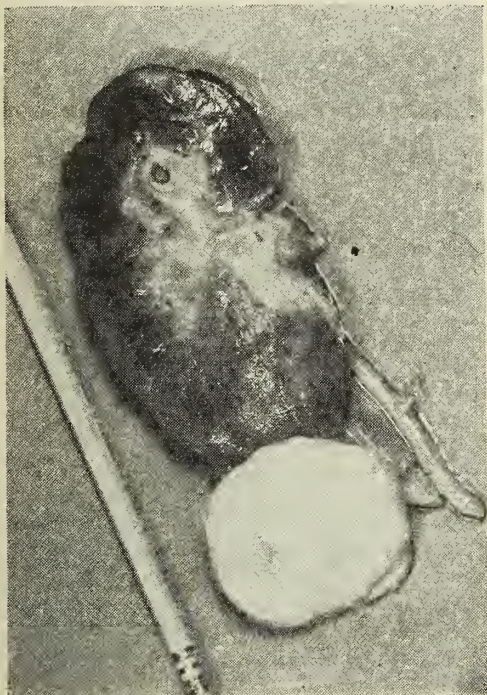


Fig. 3. Left kidney showing well encapsulated carcinoma at lower pole.

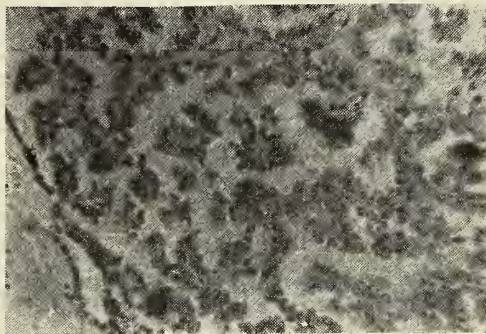


Fig. 4. Photomicrograph of well differentiated papillary adenocarcinoma of kidney.

mal but six days later gradually increased until the daily fluctuation was from 98 to 103 F. The administration of penicillin was discontinued on March 15, and the temperature promptly dropped to normal where it remained for the remaining 29 days of the patient's life.

The patient felt better as soon as the fever had subsided after discontinuance of the injection of penicillin. The night sweats disappeared and she continued to feel stronger daily. On April 1 she was allowed to sit in a chair for a few minutes and on succeeding days the period out of bed was increased gradually. The pulse rate continued at 90 to 110 per minute and she was gradually digitalized because of this and the appearance of a gallop rhythm. Her progress was satisfactory until the final episode which is graphically depicted in the note of the intern: "At approximately 9:15 p. m. 4/13/45, the patient complained to the nurse of chest pain and the nurse noted cold clammy skin. When the patient was seen by me a minute later she was sitting up in bed with a grayish pallor, shortness of breath, cold clammy skin, and complaining of substernal pain and pain in the left shoulder. She stated that she could not breathe lying down so the back-rest was rolled up. Pulse rate was 138 per minute. Respirations were in rapid gasps. There were coarse moist râles throughout the chest. Morphine sulfate gr.

$\frac{1}{4}$ was ordered. She was given aminophyllin gr. $7\frac{1}{2}$ (i.v.), papaverine gr. 1 (i.m.), caffeine sodium benzoate (i.v.). Respirations ceased at approximately 9:30 p. m. but the heart action continued. Tourniquets were applied to the thighs and artificial respiration was administered. The trachea was aspirated and oxygen was given by inhalation. The heart action ceased at approximately 9:45 p. m. Epinephrine, 2 cc. was given into the heart without avail."

Clinical Diagnosis

Rheumatic heart disease.

Aortic regurgitation and mitral stenosis.

Subacute bacterial endocarditis due to *Streptococcus viridans*.

Cardiac failure or pulmonary infarction.

Summary of Necropsy Findings

The heart was moderately enlarged. It weighed 600 gm. (Normal weight is 250-280 gm.) The right ventricle was 7 mm. thick despite considerable dilatation of the right side of the heart. The aortic and mitral valve leaflets were thickened and scarred. The aortic cusps were retracted and the free edges appeared to be rolled. One small ulcer, 6 mm. in diameter, was found on the auricular surface of the posterior leaflet of the mitral valve. There was some evidence of healing, and the margins were irregular. Numerous small nodular masses were seen on the free edge of the mitral leaflet. These were thought to be healed vegetations. Two small scarred vegetations had formed on the posterior surface of the mitral valve leaflet. They appeared to be completely inactive at time of autopsy. Two small ulcers had involved the posterior leaflet of the aortic valve. Small masses of fibrinous material were adherent to these ulcers. Small foci of fibrosis were present in the myocardium. A few large mononuclear cells and a few inflammatory cells were seen in the interstices of the fibrous tissue. Beta-hemolytic streptococcus and hemolytic staphylococcus aureus were cultured from the aortic vegetations. Culture of post-mortem blood grew beta-hemolytic streptococcus.

The lungs were extremely edematous. They were somewhat heavier than normal (wt. 900 gm.; normal 650 gm.) as a result of the accumulation of fluid. Several tough fibrous adhesions bound the lower lobes to the chest wall and diaphragm. One old infarct was found in the spleen, but none were found in the lungs. The spleen and liver were greatly congested. Numerous old depressed scars were found in the kidney cortices. There was chronic focal glomerulonephritis in both kidneys.

A well encapsulated, well differentiated papillary adenocarcinoma was found near the lower pole of the left kidney.

Necropsy Diagnoses

Bacterial endocarditis, healing, of the mitral and aortic valves.

Myocarditis, diffuse interstitial, mild.

Cardiac hypertrophy with myocardial scarring.

Pericarditis, old, mild.

Cardiac failure with passive congestion of lungs and other viscera, bilateral hydrothorax, ascites and hydropericardium.

Infarcts, old, of the spleen.

Infarcts, old, of the kidneys with focal nephritis, chronic.

Papillary adenocarcinoma, well differentiated, left kidney.

Pleural adhesions, old, right.

Clinical Discussion

Dr. B. F. Wolverton (Cedar Rapids): This patient was hospitalized at Mercy Hospital in Cedar Rapids. Her entry complaints were fever and palpitation. She had rheumatic fever at the age of 11 years. She developed rheumatic heart disease in spite of the therapy given to her. In the summer of 1945 she consulted a physician for fever. He found that agglutination tests for undulant fever were positive. Her fever subsided by the middle of October but recurred 11 weeks before her admission to the hospital. It was assumed that it was due to undulant fever. Her temperature was 102 F. and her pulse rate 130 per minute on admission. She had the following positive findings: flushed skin, visible pulsation of the carotid arteries, prominent diffuse apical impulse, and an aortic diastolic murmur. Blood culture was reported positive for *Streptococcus viridans*. She had a Corrigan type pulse, but no petechiae were ever found. There were no red cells in the urinary sediment although there were 10-12 pus cells per high power field and a trace of albumin. Her white blood count was 15,000 per cu. mm. with a differential count which was not unusual. The organism was subcultured and sent to Dr. Sherman at the University of Pennsylvania for typing. It was identified as *Streptococcus S.B.E.* Two million units of penicillin daily was the dose recommended at a later date, but at this time 200,000 was considered adequate. This was given intramuscularly at two-hour intervals. After June 1, the dosage was raised to 400-600,000 units daily by continuous intravenous drip. Enough sulfadiazine to maintain a blood level of 10-15 mg. per 100 cc. was given for 10 days with the 400,000 unit dosage. She received a total of 7,000,000 units of penicillin. She had six blood cultures, the fifth of which was negative, but the sixth was positive. She was then transferred to the University Hospital for higher penicillin dosage.

Dr. E. L. DeGowin (Internal Medicine): This patient never had petechiae or hematuria while under

observation here. The diagnosis of rheumatic heart disease was unquestioned. She showed all the signs of aortic regurgitation and, because of pulsation in the suprasternal notch, a mycotic aneurysm of the innominate or right carotid artery was postulated. No mitral murmur could be heard. Acute left-sided heart failure or pulmonary embolism were thought to be the immediate cause of death because of the suddenness of the symptoms. Her fever had persisted as long as she was given penicillin, but subsided when the drug was stopped. This phenomenon has been noted in other cases of this disease.

Dr. E. D. Warner (Pathology): The apparent immediate cause of death, from the anatomic standpoint, was cardiac failure, the degree of dilatation being more severe on the right side than on the left, however. Culture of the vegetations taken post-mortem showed alpha-hemolytic streptococcus, mixed with large amounts of beta-hemolytic streptococcus, hemolytic staphylococcus aureus and staphylococcus albus. These latter three organisms probably represent an agonal invasion rather than primary infection.

Dr. A. P. McKee (Bacteriology): The first six blood cultures which we received from this patient between February 20 and February 27 were all positive for alpha-hemolytic streptococcus. From that time on they were all negative until we received the post mortem cultures. Streptococcus S.B.E. (*Streptococcus sanguis*) has been found in about one-third of the cases of subacute bacterial endocarditis. Together with *Streptococcus mitis* about 87 to 90 per cent of the cases are accounted for. This organism can be differentiated from those of similar morphology and cultural characteristics by its biochemical and serologic reactions. It possesses two different precipitinogens. It does not cross with groups A through G of the Lancefield groupings. It forms a homogeneous group and 90 per cent of the strains are in one serologic group. Agglutination technics cannot be used to identify the serologic reactions, and the more complex precipitation technics are required. It is thought that they are more resistant to penicillin than other organisms. An attempt was made to isolate the organism from normal throats, but this could not be done. It was found in one case of sinusitis and in the tooth socket of another patient with subacute bacterial endocarditis. Since the organism can withstand the presence of bile, it should survive in the intestinal tract; however, the stools have not been examined for it. The organism is able to synthesize large amounts of polysaccharide from 5 per cent sucrose. Some strains of *Streptococcus S.B.E.* cannot do this. There is no known difference in penicillin susceptibility of the two types of *Streptococcus S.B.E.*

Dr. R. Hardin (Internal Medicine): In the period from 1925 to 1946 there have been 138 cases of proven subacute bacterial endocarditis in this hospital. One hundred and twenty-four of these were seen before Jan. 1, 1945. Of these, two have survived. There have been 14 cases since. Eight of the 14 patients

are still alive. Before 1939 therapy was entirely supportive. Thirty-eight of the 53 cases seen since 1938 have been actively treated. There have been five types of therapy: hyperthermia, neoarsphenamine, sulfonamide, penicillin and surgery. None of the first group has survived. In the second group (treated with neoarsphenamine and sulfonamides) there were 5 cases. One improved, one was cured, two died, and the results are unknown in one case. Sixteen cases were treated with sulfonamides alone. This treatment was given from 1 to 50 days. Some died shortly after therapy was started. Others developed sensitivity, necessitating stopping the drug. One patient with a patent ductus arteriosus was treated surgically. She is alive and apparently well after 18 months. In the group treated with penicillin there was one case prior to Jan. 1, 1945, and 14 since. Six have died, and 9 are still alive. Among the patients who died, the average survival time was 2 months with the longest surviving 4 months. Of those still living, the average time since diagnosis is 12.6 months, with a range of 3 to 41 months. Four of these are free of infection but have severely damaged hearts. One is free of endocarditis but has grand mal seizures, the result of a ruptured mycotic aneurysm in the circle of Willis. Four are clinically well. The one who has survived 41 months still has positive blood cultures from time to time. His dosage of penicillin was probably inadequate. The variables in treatment are: (1) sensitivity of the organism to penicillin; (2) size of the dose to be given; and (3) duration of treatment. The standard course is now 40-50,000 units every three hours for 6 weeks. When there is no apparent clinical improvement, higher dosage is used up to 10,000,000 units per day by intramuscular drip. The blood cultures must be negative for one year before a cure is acknowledged. The present mortality rate for this disease is about 40 per cent. Half of the survivors are chronic invalids for one reason or another. A patient can be considered to have a 30 per cent chance of dying, 30 per cent chance of becoming a chronic invalid, and about 30 per cent chance of receiving a cure. The mortality rate before penicillin was more than 99 per cent.

Dr. Warner: What was the actual cause of death in the treated patients?

Dr. Hardin: All died of congestive heart failure. The infection was seemingly controlled.

Dr. A. L. Saks (Neurology): The heart and blood stream are the source of many otherwise unexplainable cerebral strokes in adults, especially females. There is often no history between the acute rheumatic fever or chorea and the stroke. There may be a mycotic aneurysm in the circle of Willis.

Dr. Hardin: Of our 138 patients, 25 per cent came into the hospital with neurologic symptoms.

Dr. DeGowin: What is the cause of the interstitial myocarditis in this case? Is it active rheumatic fever?

Dr. Warner: No. It goes along with chronic infection. I do not believe that it is a recrudescence

of acute rheumatic fever. It is comparable to the focal necrosis we see in the liver and kidneys in cases of long-standing infection.

Dr. DeGowin: Can we explain the physical findings in the heart on the basis of your findings at autopsy?

Dr. Warner: No. The degree of aortic insufficiency clinically and the anatomical findings do not correlate well. The valve ring in this case was not out of proportion to the heart size. The valve leaflets were scarred, but they could still be approximated. That is the common situation. The valve does not usually look as bad as it actually is. This is possibly more common in younger people but not limited to them.

1947 ANNUAL MEETING

Plans for the 1947 annual meeting of the Iowa State Medical Society are practically complete. Once again we will have a two and a half day session, starting Wednesday afternoon, April 16, with a symposium on pediatric and obstetric subjects. Thursday and Friday mornings will be devoted to general sessions; there will be short section meetings each afternoon and then a general session to close the day.

The meeting is to be more of a postgraduate course than the usual type of program; excellent speakers have been invited. Mark the dates April 16, 17 and 18 on your calendar and plan now to attend. Meeting place is the Hotel Fort Des Moines in Des Moines.

FELLOWSHIP IN THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association is going to celebrate its centennial in Atlantic City, N. J., June 9 through 13, 1947. Elaborate plans are being made for this celebration.

Only Fellows and invited guests are eligible to attend. Membership in your state society is the primary qualification for Fellowship in the A.M.A. Fellowship dues and subscription to the *Journal of the American Medical Association* are both included

in one annual payment of eight dollars, which is the cost of the *Journal* to subscribers who are not Fellows.

If any doctor who is not a Fellow plans to attend the Atlantic City session, which will be a milestone in medical history, he can save himself considerable time and confusion when registering if he will write now to the American Medical Association, 535 North Dearborn Street, Chicago 10, and ask if he is eligible to become a Fellow.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Board of Trustees
November 24, 1946

The Board of Trustees of the Iowa State Medical Society met in the central office Sunday morning, November 24, 1946, with the following persons present: Doctors John I. Marker, W. A. Sternberg and Lee R. Woodward of the board; Robert L. Parker, president; John C. Parsons, secretary; and J. A. Downing, treasurer.

Business transacted was as follows: Minutes were read and approved; bills were authorized; the audit of the books for 1946 was authorized; the editorial board for 1947 and advertising policies were discussed; renewal of the lease for office space for five years was approved; and certain budget figures for 1947 were determined with final formulation of the budget left until the end of the year.

CHANGE OF ADDRESS

Help your central office to maintain an accurate mailing list.
Send your change of address promptly to the Journal,
505 Bankers Trust Bldg.,
Des Moines 9, Iowa

MORBIDITY REPORT

Disease	Nov. '46	Oct. '46	Nov. '45	Most Cases Reported From
Diphtheria	19	17	74	Black Hawk, Fremont, Woodbury
Scarlet Fever	119	72	229	Cerro Gordo, Linn, Polk
Typhoid Fever	2	7	4	Buena Vista, Cerro Gordo
Smallpox	0	0	0	
Measles	33	5	18	Appanoose, Black Hawk, Clinton
Whooping Cough	76	34	39	Boone, Delaware, Dickinson
Brucellosis	*173	*140	*249	Dubuque, Lee, Polk
Chickenpox	384	69	204	Dubuque, Linn, Mahaska
German Measles	5	2	2	Adams, Boone, Poweshiek
Influenza	1	0	8	Marshall
Malaria	2	8	19	Polk
Meningococcus Meningitis	7	14	8	O'Brien, Osceola, Scott
Mumps	54	36	170	Black Hawk, Clayton, Delaware
Pneumonia	19	57	14	Black Hawk, Mahaska
Polioomyelitis	96	117	42	Bremer, Polk, Woodbury
Tuberculosis	63	93	50	Black Hawk, Scott, Polk

*Delayed Reports.

STATE DEPARTMENT OF HEALTH



MEDICINE IN MEXICO

Carl F. Jordan, M.D.

Director, Division of Preventable Diseases and Epidemiologist,
Iowa State Department of Health

In recent years, five national meetings for the study of brucellosis have been held in Mexico. The first conference on this subject took place in that country in 1939 and the second in 1940; the third and fourth meetings were conducted during the first years of World War II. It was the writer's privilege to attend the fifth national and the first Inter-American Congress on Brucellosis, held in Mexico City Oct. 28 through Nov. 2, 1946.

Physicians and veterinarians from the United States who were at the recent meeting included: Alice Evans, recently retired senior bacteriologist, U. S. Public Health Service; I. Forest Huddleson, D.V.M., Research Professor in Bacteriology, Michigan State College; Harold J. Harris, M.D., New York; V. T. Schuhardt, D.V.M., Texas; James P. Campbell, M.D., Illinois; Joseph D'Antoni, M.D., Louisiana; M. J. Moss, M.D., Indiana; Harry J. Schmidt, M.D., Mississippi, and Carl F. Jordan, M.D., Iowa. Spanish-speaking physicians comprised the great majority of approximately eighty persons who were present at the sessions. Doctors gathered from Mexico City and from all sections of Mexico, Cuba, Puerto Rico, Central American countries, Columbia, Brazil, and Argentina.

Mexico City is approximately 2,000 miles removed from Iowa, Dallas and Ft. Worth being midway stopping points for travel by train or airplane. The capital of Mexico is a thriving, rapidly growing metropolis with a population estimated at 2,250,000. What impresses the stranger most on arrival is the enormous building program; many are the new business structures, apartment houses, and hospitals recently completed or now in process of construction. Many older buildings have been or are being rebuilt—all part of a five-year construction project. Many new along with old cars are in evidence, which combined with crowded

street cars, busses, "curbliners" and pedestrians, render traffic more congested and hazardous than in the larger cities of Iowa.

Most of the sessions of the brucellosis meeting were held at the General Hospital, located about two miles south of the heart of the business section. The "Hospital General" covers an area four blocks around, surrounded by a high white wall with wide gates to north, east, south, and west.

Across the street from the south wall of the General Hospital are three large buildings: (1) a recently completed Children's Hospital with four multi-storied wings extending to the south; (2) a new building for cardiac diseases adjacent to and west of the Children's Hospital; and (3), a Women's Hospital now in process of construction and immediately east of the Children's Hospital. About midway along the east side of the General Hospital area is a new hospital, elegantly furnished and finished, with laboratories containing the most modern equipment and apparatus, designed solely for treatment of nutritional disorders and research in the field of nutrition. Staff physicians in these hospitals show a keen sense of responsibility; they are determined to continue with the rapid advances which are being made in medicine and surgery in Mexico.

Seated at the speaker's table during the opening session were Dr. Bolz, Secretary of Health, Mexico; Dr. Zubitan, Dean, University of Mexico; Dr. Ganzaes Herrijan, Dean, University of Mexico Medical School; J. Zozaya, M.D., Director, Institute of Hygiene and Tropical Medicine, and M. Ruiz Castaneda, M.D., Director, Department of Medical Research, General Hospital. Alice Evans received special recognition at this time and Dr. Huddleson was presented with a beautiful hand-printed scroll.

Most of the sessions of the brucellosis conference were held in the Laboratory building of the Department of Medical Research, General Hospital. Here Dr. Castaneda and his associates have conducted numerous studies, made important contributions to knowledge of brucellosis, epidemic

and endemic forms of typhus fever, and have published many articles on these subjects. Articles written in Spanish had been translated into English during the days preceding the meeting; the translation was shown on a screen as each speaker presented his paper. This method was of great help to those, of whom the writer was one, having a very meager knowledge of Spanish. The reverse method was employed with the papers written in English for the benefit of some of the Spanish-speaking doctors. During morning and afternoon sessions from Monday through Saturday, seventy-one papers were presented, some having to do with bacteriologic, clinical, pathologic, allergic and immunologic phases; others with laboratory diagnosis, epidemiology, treatment and control of brucellosis. The enthusiasm and efforts of Dr. Castaneda who served as secretary, contributed much to the success of the meeting.

Alice Evans was elected president, and provisional plans were made for another Inter-American Congress on Brucellosis to be held in the spring of 1948.

A sad note was added during the days following the conference because of the death on November 7 of Dr. S. Mazza, a prominent and highly revered bacteriologist and pathologist from Buenos Aires, Argentina. Dr. Mazza presented a paper entitled, "The Pathological Anatomy of Brucellosis of Man," and took active part in the daily discussion periods. He had been traveling for nearly a month and suffered a heart attack while going by plane from Mexico City to Monterrey.

The writer's paper on the subject "Epidemiology of Brucellosis" was based in large part on data contained in case reports completed over a period of years through the interest and courtesy of Iowa physicians. "In Iowa," it was stated, "the morbidity rate from brucellosis is highest among those (packing house employees, male farm workers, veterinarians) whose occupation brings them into direct contact with diseased animals. On the other hand, the incidence of brucellosis is lowest among urban residents who do not handle livestock and who use none but pasteurized dairy products." Emphasis was placed on the fact that the caprine strain of brucella (*Br. melitensis*) is now known to be endemic in Iowa and that the source of infection thus far has proved to be, not in sheep or goats as would be expected, but in hogs. Credit was given to I. H. Borts, M.D., Director, Iowa State Hygienic Laboratory, for successful isolation of *Brucella melitensis* from the blood of over 40 Iowa patients during the past three years and to S. H. McNutt, D.V.M.,

formerly in charge of Veterinary Research at Iowa State College, for recovery of *Br. melitensis* from swine tissues in February and again in April, 1946.

Problems presented by brucellosis in Mexico are different from those in Iowa. Blood culture findings as reported by Castaneda, and associates indicate that fully 95 per cent of all cases of this disease in Mexico are caused by the goat strain, *Br. melitensis*. Unpasteurized dairy products, particularly cheese made from goats' cream, cows' cream, or a mixture of the two, and milk and cream from those animals account for a high percentage of all human cases. According to Dr. Alfonso Angelini who discussed epidemiologic characteristics of brucellosis in Mexico City at the recent meeting: "The fresh goat cheese is the principal source of infection among us. Fresh goat cheese is one of the principal delicacies of our people. Brucellosis is more frequent in females (54 per cent) than in the male sex (46 per cent)." Mexico with its 20,000,000 people has over 2,000,000 goats in marked contrast with Iowa which probably has not more than a thousand goats in the entire state. Although few cases of brucellosis have been traced to cows and hogs in Mexico, Dr. Zozaya, in an article entitled "Undulant Fever, Epidemiology and Statistics in Mexico," published in 1942, stated that hogs would probably be found to harbor brucella of the goat strain, *Br. melitensis*.

Mexico City has a large, four storied building which houses the Institute of Hygiene and Tropical Diseases. Here physicians receive postgraduate training for public health work. Malaria, hookworm, dysentery and tuberculosis are diseases with high incidence in some parts of Mexico. Dr. Miguel E. Bustamante, Director of the Laboratory of Epidemiology and Statistics, has collaborated with other staff members of the Institute, in the investigation and control of various diseases, including epidemic typhus, endemic typhus and Rocky Mountain fever. Differentiation of these clinical entities is more difficult in tropical and subtropical areas than farther north in the temperate zone.

Mexico City has three schools of medicine: (1) the Medical School of the University of Mexico; (2) the Army Medical School associated with a large Army Hospital; and (3) the School of Rural Medicine, established in 1936 and located at the Polytechnic Institute in 1938. "Here, promising youths from poor homes receive medical training with the understanding that upon graduation they will enter rural medical service for at least 5 years."

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Happy New Year

With the beginning of a new year it has been the custom to extend best wishes to our readers. This the JOURNAL takes pleasure in doing with genuine good will for the year 1947. Nineteen hundred and forty-six will long be remembered as a year in which the whole pattern of medical practice was seriously threatened. Proponents of bureaucratic medicine made inroads upon the form of medical practice carried on during the last century and a half. The answer to this threat by the formation of medical service plans has gone forward rapidly in many of the states, including Iowa. At the end of 1946 Iowa Medical Service was participated in by 880 physicians, covering 16,364 individuals.

Nineteen hundred and forty-six also signaled the centennial of Iowa's statehood. The occasion was marked by numerous local celebrations and the JOURNAL contributed one issue with original papers by distinguished graduates of the State University of Iowa College of Medicine.

In the field of scientific advance, streptomycin became available for generalized use by members of the profession. The American Academy of Pediatrics undertook a national survey of child health services. The American Red Cross distributed surplus blood derivatives remaining from the war years for civilian consumption. The Veterans Administration program was forwarded by negotiations for formal signature of contracts with the Iowa State Medical Society wherein members would become authorized to treat service

connected disabilities in the veterans' home towns. Under federal legislation opportunities for construction of new county hospitals became a possibility, and bond issues for 50 new hospitals have been passed.

Nineteen hundred and forty-seven holds many promises for developments in medicine. In June the American Medical Association will hold its centennial convention in Atlantic City. Of great interest to Iowans will be the new section on the general practice of medicine. A weekly radio program sponsored by the American Medical Association will go forward during the year dramatizing "Doctors Then and Now." The American Medical Association has also embarked upon a public relations venture, although it must be kept in mind that the individual physician is in the best position to further the field of medicine in relation to the general public.

There is still an opportunity in Iowa for physicians to aid medicine in its advancement. The percentage of physicians enrolled in Iowa Medical Service leaves much to be desired to achieve the best results of this plan. Let each physician appreciate his responsibility to his patients and his community, and let each strive to make 1947 an outstanding year for advancement in professional and public relations.

Dyspnea and Shortness of Breath

Perfectionists are often disturbed because physicians habitually mispronounce so many medical and scientific words, and sometimes one of them tries to do something about it, as for example, J. V. Cooke.* Reminders such as Cooke's should not be necessary, for the correct use of one's verbal scientific tools ought to be just as automatic as the performance of any standardized laboratory or bedside procedure. However, whether we do or do not pronounce words correctly, we usually understand each other, so that deviations from the straight and narrow orthoepic path result in nothing more catastrophic than a severe jarring of sensibilities.

A somewhat more serious matter is the misuse of medical terms, for this leads to confusion in diagnosis and treatment. Just one instance will be educed, namely, the distinction between dyspnea and shortness of breath. Perusal of the literature on respiratory symptomatology shows that most authors use the terms interchangeably, but this is unjustifiable. Even patients, with a little coaching, distinguish readily between the two. Dyspnea properly connotes a sense of choking or throttling.

*Cooke, J. V.: Don't take your word for it. J. Pediat., xxi: 386-391 (September) 1942.

This sensation is often so real that, if the first attack occurs at night when the patient is asleep, he may actually think that someone has attacked him with murderous intent. This kind of dyspnea is almost invariably a symptom of coronary artery disease or left ventricular strain or failure. It does not occur with lesions which affect the right ventricle primarily or both ventricles equally. Syphilitic aortitis and diseases of the mediastinum are deliberately excluded from this discussion. Dyspnea in the sense that breathing is hard work also exists when one must breathe against high resistance, as in severe bronchial asthma or obstruction of the major air passages. Finally, the term dyspnea may be correctly applied to breathing which is painful because of acute pleurisy or rib fractures.

Shortness of breath is quite another matter. It means simply air hunger from oxygen want, and everybody, be he healthy or not, develops it if he exercises hard enough. After the race the runner puffs and pants, but, unless he has driven himself beyond the ordinary limits of human endurance, his breathing is not labored or painful, and he certainly has no choking or throttling sensation. As he gradually discharges his oxygen debt his hyperpnea subsides and he ceases to be conscious of his breathing. Myocardial insufficiency, among other things, causes shortness of breath, but simple air hunger gives no indication of the nature of the underlying disease. One may have dyspnea and shortness of breath at the same time, or either may exist alone (sense of choking without hyperpnea, air hunger without the throttling sensation). The important point is that true cardiac dyspnea always indicates disease which impairs the function of the left ventricle, whereas simple shortness of breath has no such definitive connotation.

Cooperation With the State Department of Health

On November 15, 1946, a state health council was created in Vermont in an effort to coordinate health programs in that state. The movement was sponsored by the Vermont State Medical Society. The object of the new group is revision and expansion of the state public health department; "integration" of public health department and college of medicine laboratories; establishment of small rural health centers; expansion of nutrition programs; control and eradication of tuberculosis, venereal disease, undulant fever and other communicable diseases; cooperation of private physicians in the diagnosis, care and treatment of other diseases; increased ma-

ternal health services; expansion of child health services to include medical and dental examinations and immunization; and extension of treatment and care of the mentally ill and mentally deficient. Other programs outlined included support of the college of medicine at the University of Vermont, promotion of hospital development, efforts to make the practice of medicine in rural areas more attractive, correction of pay inequalities for health and hospital personnel, promotion of the education, training and welfare of the nursing and the pharmaceutical professions and the supporting of legislation to the ends outlined.

A similar arrangement is in effect in Illinois. Physicians in general are apt to be wary of anything connoting "state medicine." On the other hand, the infiltration of governmental influence among physicians is often healthy and to be desired. Through the acceptance of federal funds the Iowa State Department of Health has taken a leading role in the program against tuberculosis; federal funds have done much in the control of venereal disease, cancer, and general health (vital statistics, preventable diseases, nursing, health services, maternal and child health). These funds are provided by the various agencies of the United States Public Health Service. While it is the function of the United States Public Health Service to do all in its power to prevent the spread of communicable diseases and assist in the maintenance of public health, it is the private physician's task not only to diagnose and to treat individual patients but also to protect the public health through the close supervision of those who endanger the physical well being of the community.

At once it becomes evident that cooperation with the Commissioner of Health is highly desirable. Undoubtedly, a general committee appointed by the State Society to assist in the problems of maternal and child health, tuberculosis and venereal disease control, and hospital construction would be able to do much for the improvement of public health in Iowa.

Spinal Anesthesia

At the annual meeting of the American Medical Association last July Nicholson and Eversole called attention to complications of spinal anesthesia among 21,000 patients at the Lahey Clinic. Headache, septic and aseptic meningitis, arachnoiditis, neuritis, myelitis and the cauda equina syndrome have been the complications most frequently reported following spinal anesthesia. The first warning is the failure of the patient to regain

the use of his lower extremities at the usual time following spinal anesthesia. On examination, loss of motor and sensory function is generally found to involve the lumbosacral nerve distribution. Associated observations are urinary retention and incontinence of feces with the loss of anal sphincter tone. This loss of bowel and bladder function is the most ominous part of the entire clinical picture, and the return of function, when it occurs, is extremely slow. Impairment of sensation seems to be exceedingly variable.

It is a fortunate occurrence that these complications are rare. It was admitted that complications usually followed general anesthesia during which anoxia was present. It was pointed out that the majority of the complications occurred when tetracaine hydrochloride (pontocaine) was used. There is no doubt but what pontocaine is a more toxic drug than procaine and therefore should be used only when long acting anesthesia is definitely required.

The probability of there being many cases of cauda equina syndrome following the use of procaine in solutions of 5 per cent or less is low. By using procaine crystals in their original ampules we lessen chances of error in the dosage and type of drug. Trauma to nerve filaments or roots resulting in a stab of pain down the patient's leg may be followed by small areas of anesthetic lasting for a few weeks. If spinal anesthesia is used in the presence of pre-existing cord disease we can expect an increased rate of progression of symptoms due to that disease. Certainly spinal anesthesia should not be used in cases where we know there is spinal cord disease.

Conference of State Secretaries and Editors

The annual conference of state secretaries and editors was held at the American Medical Association headquarters in Chicago December 7 and 8. Dr. R. L. Sensenich, chairman of the Board of Trustees, welcomed the group. Dr. Julian P. Price, secretary of the South Carolina Medical Association, was chosen to act as chairman for the two-day session, and he introduced Dr. George F. Lull, secretary of the American Medical Association. Dr. Lull also welcomed the group, saying it was through this group that the policies and work of the association were implemented and activated. He then quoted from an article in the October, 1946, issue of *Scientific Monthly* setting forth the qualifications for an executive secretary of any group. These were politeness, good sense, sincerity, enthusiasm, and a good sense of humor. Dr. Lull elaborated on these essentials, adding

other requirements he felt necessary for secretaries of medical groups.

Dr. W. W. Bauer, director of the Bureau of Health Education of the American Medical Association, told of the Bureau's plan to identify the Association broadcasting with state medical societies. For the centennial program, the Association has grouped two and three states into districts, asking each district to provide information about some outstanding medical character of that area. This will be presented over the national broadcast weekly, a half-hour program, for six months. The first program so broadcast was recorded and played at the meeting on Sunday morning.

Dr. Creighton Barker, secretary of the Connecticut State Medical Society, discussed the state medical society and state government. He said medical service is almost as essential as light and power, that medical care comes close to being a public utility. A broad interest in politics by the medical society and a similar interest in medicine by the government can be a wholesome development. The medical society can be a valuable public servant. A society which accepts its responsibilities rates highly, and its advice is sought by government. Such a society can be freed from engaging in controversial politics.

He mentioned three categories into which legislative chairmen may fall: the "fixer," the orator, and the calm deliberate person who is pretty sure to know when to go to work. He said in Connecticut they preferred the latter. They send memoranda to committee members on legislation and visit with them at home; they also have a spokesman upon whom legislators may call. This may be a layman, but he should be available at all times with competent medical advice. They also have an advisory committee for government agencies. Summing up, he listed integrity, patience, a liking for and faith in the job, and a broad knowledge of the state as essentials for a successful legislative contact man.

Dr. James C. Sargent of Wisconsin next spoke on the responsibility of the individual physician. He said individual physicians were needed to play the part of the foot soldier. Doctors do not agree too easily and find it difficult to unite in a common cause. Their background and training unfit them for hemming and hawing. However, they should recognize good leadership and go along with it.

Increased state dues are probably necessary for expanded activities. The medical profession must recognize its responsibility to provide an adequate medical service, and voluntary sickness insurance may prove the answer to most of the problem.

Mr. T. V. McDavitt discussed state medical associations and social security and federal income taxes. Some states have not applied for a ruling on their status under the income tax law, and he felt they as well as some of the larger county medical societies, should do so. He gave a comprehensive explanation of the ruling governing the tax status of nonprofit organizations.

Mr. M. L. Meadors, Director of Public Relations of the South Carolina Medical Association, spoke on the county medical society. He said county units were essential since they were closest to the people and to the law-makers. Doctors must be educated to the necessity of public relations. Discussions at meetings should cover the health needs of the community; the active, energetic interest of the county society in conditions which require improvement is essential; and a more direct connection should be had between county medical societies and departments of health.

Dr. Stanley B. Weld, editor-in-chief of the *Connecticut State Medical Journal*, reported on the changes and the progress made in the Cooperative Medical Advertising Bureau in the last four years. The Bureau was established in 1913 on mandate of the House of Delegates to serve the state journals. At the present time all state journals except New York and Illinois are members. The principles of the Council on Pharmacy and Chemistry govern the selection of advertising. These were revised in 1946 and permit greater freedom in the acceptance of products and companies.

The final paper on Saturday was given by Mr. Charles Swart, the new public relations representative for the American Medical Association who is serving as executive assistant to Dr. Lull as authorized by the House of Delegates in July. Mr. Swart spoke on the medical profession and public relations, stressing the fact that publicity pamphlets on a shelf do not constitute public relations. A public relations program must be an active thing, and in the final analysis it is the sum total of private relations. There should be a direct line of contact between the American Medical Association and the state and county organizations. The news letter should probably be sent to many more doctors to acquaint them with organization policies and work. Indifference is hard to take, worse than hostility. He agreed with Mr. Meadors that doctors should study the health needs of their own community and be active in improving them, calling in community leaders to aid. He stressed the importance of getting such persons to participate in health programs.

The Sunday morning session opened with a

talk by Governor Dwight H. Green of Illinois. Governor Green said history showed that public health improvement usually followed tardily the advice of the medical profession. He said it was hard to combat government propaganda because it was called sickness insurance. However, he felt the November election vote was a referendum between government control and private enterprise, and private enterprise won. The medical profession now has a golden opportunity. It must avoid the mistakes and indifference of the past and must push the ten-point program. It must seek healthy competition to render the best possible medical service in the most scientific, business-like way.

Following Governor Green's talk, the morning was devoted to an open forum on papers already presented. Summaries of the Saturday evening meetings were given. The report from the editor's section revealed that those attending felt it was most worthwhile to have a meeting of editors for editors. At this session Mr. Theodore Wiprud, managing editor of the *Medical Annals of the District of Columbia*, presented a paper on "The Medical Editor Consults His Readers," and Dr. Jonathan Forman, editor of the *Ohio State Medical Journal*, a paper on "Our Concept of the Function of a State Medical Journal."

Mr. Wiprud has from time to time made surveys of reader interest, finding the first interest to be in scientific articles, the next in editorials. Dr. Forman felt the *JOURNAL* should be a house organ and that it should serve an educational purpose, reaching rural practitioners. He felt it should contain items of local interest plus historical articles. The editor should strive to advance his journal constantly and to keep it timely.

Dr. L. Fernald Foster, secretary of the Michigan State Medical Society, discussed commercial exhibits in the first paper at the secretaries' meeting. He felt the term should be changed to technical exhibits, since all of them were technical and educational in nature, not commercial in the true sense. He brought out the essentials to conducting a satisfactory meeting. Technical exhibits make possible the annual meeting of most societies, and the exhibitors should receive great consideration when space is allotted. He recommended that all doctors should have to pass each exhibit on the way to and from the meeting room, and that the program should be in the nature of a postgraduate course, being left as a general session rather than being broken up into sectional meetings.

Mr. R. H. Graham, executive secretary of the Oklahoma State Medical Association, discussed

the home office of a state medical association. He said it was impossible for him to conceive of such an office being located elsewhere than in a state capitol, since 40 per cent of his time was devoted to contacts with state agencies. He stressed the need for the best equipment in an association office and good personnel.

Discussion of all of the papers followed; a committee of five persons was appointed to serve with Dr. Lull in planning next year's conference, and the meeting was adjourned.

Mid-Year Meeting of the House of Delegates

The San Francisco session of the House of Delegates recommended that mid-year sessions of the House be held when there is so much of importance to be considered by the medical profession. In accord with that recommendation, the House convened at the headquarters of the American Medical Association in Chicago December 9 for a three-day meeting. One hundred and sixty-seven delegates were registered before the close of the session.

Dr. Roy B. Fouts, speaker of the house, urged greater attendance at reference committees. Dr. Harrison H. Shoulders, president, urged that there be no let-up in the extension of medical care, and that financial technics be improved in keeping with the times. He said American medicine could well be proud of its past and hopeful of its future. Dr. Olin West, president-elect, reiterated Dr. Shoulders' last sentence.

Dr. R. L. Sensenich, chairman of the Board of Trustees, called attention to the report of the trustees. This covers the activities of the *Journal of the American Medical Association*, special journals, *Hygeia*, the Cooperative Medical Advertising Bureau, the Directory Department, the Mailing and Order Department, Council on Pharmacy and Chemistry, the Chemical Laboratory, Council on Physical Medicine, Council on Foods and Nutrition, Council on Industrial Health, Bureau of Health Education, Bureau of Legal Medicine and Legislation, Bureau of Medical Economic Research, Bureau of Exhibits, Bureau of Investigation, and Bureau of Information. Dr. Sensenich explained the State Department had requested the Association to recommend a man to work with the International Council on War Crimes, and that Dr. Andrew C. Ivy had been chosen. He also announced the employment of Dr. Frank Dickinson as head of the Bureau of Medical Economic Research. In regard to the Rich report, he told what actions had already been taken by the Board, and reported on resolutions passed at the San Francisco session. High points of these were that

no Secretary of Health had been appointed in the President's Cabinet, although many health activities had been coordinated in the Federal Security Administration; the Kilgore-Magnuson bill did not pass; the Hill-Burton bill did pass; the Council on Medical Service has established standards for medical care plans; the home-care program for veterans is well under way in most states; and the Bureau of Health Education has been greatly expanded.

Dr. Lull reported an increase of 3,986 Fellows of the American Medical Association in the last eleven months, with the total membership reaching 129,145 on December 1. He said further efforts would be made to increase the number of Fellows of the American Medical Association.

Dr. E. R. Cuniffe reported for the Judicial Council, telling of the work being done on revision of the Principles of Medical Ethics, interpretation of the principles, and determination of eligibility for Fellowship.

Dr. H. G. Weiskotten reported for the Council on Medical Education and Hospitals, telling of the reconversion to a peacetime status. Residencies are unequal to the demand; the number of post-graduate courses is being increased; a survey of medical schools and proposed new schools is being made. The Council recommended revision of the Essentials for Approved Examining Boards in Specialties, the Essentials for Approved Residencies and Fellowships for clarification purposes, and also recommended a change in the name "Laboratory Technicians" to "Medical Technologists."

Dr. E. L. Bortz reported on plans for the Scientific Assembly at the Atlantic City meeting, listing proposed scientific papers and speakers. All efforts will be made to have the centennial meeting outstanding.

Dr. E. J. McCormick gave the report of the Council on Medical Service. He said there are now eighty plans in thirty-three states offering voluntary prepayment medical care programs, with almost five million persons enrolled. Seals of Acceptance had been granted to twenty-seven medical society approved plans on November 1.

The San Francisco session recommended that the Council form a National Health Congress. The Council investigated the matter, and its recommendation was that state and county councils to meet local needs had merit, but it did not deem a National Council advisable as a permanent group. It will draw up a model outline, and will also call conferences with national groups whenever the need exists. It asked the House of

Delegates to rescind its previous action asking a permanent National Health Congress.

A Speakers Bureau will be set up to offer "briefing courses" to representatives from state medical societies.

The Council has worked with the Council on Industrial Health in keeping in touch with developments concerning the United Mine Workers Health Fund and the Welfare and Retirement Fund.

Dr. McCormick also reported on work being done on public assistance programs, regional conferences, studies and publications from the Council office, a film on prepayment (it would be too expensive for its worth), conferences with private insurance carrier associations, enlargement of the Washington office, and more information about the headquarters office.

Dr. F. S. Crockett reported for the Committee on Rural Medical Service, saying it held its first conference in February, 1946, which was largely exploratory, and that a second will be held in February, 1947.

The Committee on National Emergency Medical Service report told of the questionnaire sent to all medical officers in World War II, from which excellent returns already have been received. Conferences will be held with the Surgeons-General of the Army and Navy; recommendations will be drawn up, and a report will be made at the Atlantic City session.

Several resolutions were introduced. They dealt with the following subjects: appointment of the Surgeons-General of the Army, Navy and Public Health Service; requirements for approval of hospitals; annual conferences for officers of county medical societies; extension of Fellowship to members of the permanent corps of the Veterans Administration on the same basis as to the Army, Navy, and United States Public Health Service; a study of the pediatric survey; a change in policy of American specialty boards; appointment on reference committees; prohibition of political activity on the part of United States Public Health Service; health education; general practice sections in approved hospitals; rendering of bills for anesthesia by persons other than licensed physicians; and continued cooperation with the United Mine Workers.

These reports and resolutions were all referred to reference committees for study, and the meeting adjourned at 1:30 p. m. Monday so that the committees might function before the Tuesday meeting.

First order of business when the meeting convened on Tuesday morning was a welcome ex-

tended to Dr. T. C. Routley, secretary of the Canadian Medical Association. Dr. Routley explained his absence from the San Francisco session by saying he had been working with the International Council on Health. The world health organization set up by the United Nations offers a great opportunity. It needs the vitalizing force of the medical profession, and through it we can demonstrate that we can carry on as one world, believing in the brotherhood of man.

Admiral Joel T. Boone was next welcomed. Admiral Boone headed the Navy teams which made a survey of health conditions in coal mine areas throughout the country. In his talk he paid tribute to the progress made in medical science during the war, recognizing the dependence of military effort on medical science. He said organized medicine must offer a logical answer to the economic problems of cost, distribution, etc., of medical care; if it does not extend directional control, other forces stand ready to do so.

In giving a summary of the coal mine problem, he brought out that the coal mines resumed operations under governmental control May 29. Section 5 of the contract deals with health matters. To get a picture of health conditions, five field survey teams were sent to study about twenty-six principal mining areas. The Navy was selected, probably because it has always had a public health problem and was familiar with the technic. The survey afforded an opportunity to study the problem impartially, with no preconceived ideas. The teams had excellent cooperation from employers, labor, medical experts, state officers, etc.

The health problem of coal mines affects the whole country and is the concern of the entire medical profession. Poor sanitation, stream pollution, poor garbage disposal and rodent control, indeed all elementary public health control measures are sadly lacking. The areas are usually isolated, and state health departments have not had sufficient funds to carry out any but a minimum program. Public health work on a county level has been ever more sporadic. Participation by the companies themselves in public health work has been for the most very meager.

The prepayment plans now in existence in coal mining areas were rooted in necessity, because in order to obtain a physician, it was necessary to guarantee him an income. The check-off, plus payment from the company, and other forms of payment and practice have grown up as a result. Medical service usually is not complete under these plans. There is generally an additional charge for family members. There is a tremendous variation in maintenance and operation of

mine hospitals. An elevation of standards is needed.

No physician can practice medicine effectively without a knowledge of the patient's background. The mine doctor today is not too familiar with industrial medicine or the background of the worker. Pre-employment examinations can be potent and constructive factors. Missionary zeal does not necessarily go hand in hand with medical progress. Mine practice offers an opportunity for a young man to obtain a secure income in a contract job, and the community can benefit from his vitality and training. However, if he remains too long in isolation, it becomes hard for him to keep up in scientific knowledge.

Two funds have been set up by the miners' contract. Fund A is raised by five cents a ton royalty on coal mined, and will provide a welfare and retirement fund. Fund B will be raised by pay deductions to provide for health, medical and hospital care and related purposes. Collection of Fund B has not started, and the method of utilizing it has not been determined. Establishment of this fund may be a precedent for other industries. Admiral Boone concluded his remarks by saying organized medicine can help fashion the pattern and must assume leadership.

Following his talk, the Rich report and the report of the committee appointed to study it were presented to the House in executive session. This will be presented in the February issue of the JOURNAL.

The House approved a resolution dealing with Dr. Ivy's report on experiments made by Nazi physicians. The experiments were absolutely opposed to the principles of the American Medical Association and are to be condemned.

The Council on Medical Service told of conferences held with the American Cancer Society and of that group's program. The county medical society must approve all details of cancer work done in a county, the Cancer Society being responsible for distributing the funds only. The American College of Surgeons will be requested to inspect detection centers. Approval of the House was asked and given.

Reports of Officers, Councils and Committees were approved without essential change. Cooperation between the American Medical Association and American Dental Association was approved; education of medical students in public health was approved and recommended; certification in general practice was left to the Section on General Practice for report in June; the recommendation for a change in standards required by the specialty boards was not adopted; the remuneration of

interns and residents was discussed but it was felt money should not be the determining factor in the choice of residencies or internships; and the resolution calling for allowance of preceptorship training for certification was not adopted.

The resolution on prohibition of political activity by the United States Public Health Service was made specific and called for complete disapproval of the statement made by Dr. Parran on December 10, 1945, telling every officer of the Public Health Service to familiarize himself with the President's health message and to be guided by its provisions when making any public statement likely to be interpreted as representing the official views of the Public Health Service.

Dr. Crabtree, delegate from the Public Health Service, protested the resolution; Dr. Goin of California and Dr. Murdock of Connecticut defended it. Dr. Goin brought forth the fact that on the date of the letter, the majority of officers in the Public Health Service were volunteer officers from civilian life, and that such an attitude was that of a public servant assuming the role of master. The report of the reference committee was overwhelmingly approved.

Further resolutions approved were as follows: contracts with hospitals by the Veterans Administration should not include medical services, and a request will be made of General Hawley that such services be not included in hospital contracts; the Council on Medical Service and the Council on Industrial Health are directed to continue close cooperation with the mine groups to attain and maintain high health standards; the Rich report having shown the value of the Woman's Auxiliary, extension of its development was urged and the Board of Trustees was asked to assist in developing its program; the secretary of the American Medical Association was asked to inform the President of the United States of the willingness of the Association to confer with proper authorities in selection of Surgeons-General of the various forces; steps should be taken to give the Veterans Administration representation in the House of Delegates; and members of the permanent medical corps of the Veterans Administration should receive the same consideration as members of the permanent corps of the United States Army, Navy, and Public Health Service, although only as long as they are members of the permanent corps.

The committee appointed in San Francisco to revise the by-laws submitted tentatively new by-laws, but the very magnitude of the procedure made it seem best to postpone final action until the June meeting.

VETERANS ADMINISTRATION

RESIDENCY PROGRAM, VETERANS ADMINISTRATION

Method of Appointment

The Dean's committee or subcommittee on neuropsychiatry will make recommendations to the manager who will have the applicant so recommended complete the necessary forms for appointment in the Department of Medicine and Surgery. The papers will then be passed on by the resident review board which may request a personal interview if indicated. If the applicant is qualified, the manager will cause the papers of appointment of the applicant to be processed. The papers of each appointee will then be transmitted to the deputy administrator, attention—branch medical director, for information and record and then returned to manager for file.

Qualifications

Physicians who are applicants for residency training must be citizens of the United States, must be graduates of schools of medicine approved by the administrator, and must have completed an internship acceptable to the administrator. In the case of non-veterans, the approved schools of medicine and hospitals for internship will be those on the list published by the Council on Medical Education and Hospitals. American Medical Association, for the year in which the course of study or internship was completed by the applicant. In the case of veterans, applicants may be graduates of schools of medicine and have completed internships other than those above if they are diplomates of the National Board of Medical Examiners or if they present evidence that they are acceptable for admission to the examinations of the specialty boards of their choice. Applicants for residency training need not be licensed to practice medicine at the time of application, provided that such license will be secured before the end of the first year of residency. When the examination for the license is taken, the applicant will be granted official leave for the purpose of taking the examination at no expense to the government.

Types of Appointments

The policy of the Veterans Administration is to provide the opportunity for residents to complete the training period required by their respective Specialty Boards. Appointment as residents

will be for a three-year period or for that fraction thereof required for completion of the requirements to qualify for the specialty board of his choice, not to include the requirements described as "practice of his profession" or a statement of similar import. Where more than three years' training is necessary for the completion of specialty board requirements, reappointment at the end of three years for a similar period or fraction thereof required for the completion of the requirements of the specialty board may be made.

Appointments as residents will be made in three grades: junior resident, intermediate resident, and senior resident. The grade of the specific applicant will be recommended by the dean's committee in accordance with the amount of previous training he has had prior to residency appointment. Junior grade appointment will be tendered to those residents with no previous experience in residency, intermediate grade for those who have had at least one year of training in their specialty, and senior grade for those with two years' training in their specialty.

(To be concluded in next issue)

NATIONAL CONFERENCE ON MEDICAL SERVICE

The 20th Annual Meeting of the National Conference on Medical Service will be held at the Palmer House, Chicago, Ill., on February 9. Registration will commence at 9:00 a. m. and the program will include discussions in the fields of national affairs, economics and medical education. All physicians are invited to attend, there is no registration fee. Dr. Cleon A. Nafe, Indianapolis, Ind., is president of the Conference, and Creighton Barker, New Haven, Conn., is the secretary.

NATIONAL CONFERENCE ON RURAL HEALTH

The second annual national conference on rural health is to be held at the Palmer House in Chicago February 7 and 8, 1947. Representatives of all farm organizations, as well as medical men from every state, are being invited to attend. The first conference was largely exploratory in nature; it is hoped the second will bring forth a constructive program for improving rural health conditions.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. MARION H. BRINKER, Jefferson

President-elect—MRS. FRED MOORE, Des Moines

Secretary—MRS. CHARLES A. NICOLL, Panora

Treasurer—MRS. HENRY G. DECKER, 2908 Woodland, Des Moines

MUST WE NATIONALIZE MEDICINE?

MORRIS FISHBEIN, M.D.

Editor, *Journal of the American Medical Association*; abstract of address before Canadian Pharmaceutical Association, June 3, 1946

Throughout the world the trend toward socialization and nationalization is being reflected in various ways. Great Britain has proposed a national health act, now in its second reading, which provides that the government of Great Britain shall take over the hospitals and the practices of the physicians and that the government of Great Britain will, in the future, determine who shall practice and where he shall practice as well as the income that he may receive for his work. Inevitably such a proposal means domination of every phase of medical care, including the drugs that are to be prescribed, the prosthetic devices that are to be used, the nature of the treatment that is to be given. How long would it be before the same bureaucratic officials that make these decisions would wish to limit even the diagnoses that can be made? We know that governments with such authority do limit even diagnosis, for Army, Navy and public health officials in the United States have listed the diagnoses to which physicians employed in these services are limited. At least there are definite limitations on the cause of death that a doctor can write on a certificate!

In the United States thus far, as has been the history of other nations, the first step toward nationalization is an intensive drive to place all of medicine under bureaucratic control. The drive evolved with the beginnings of our social security legislation in the early 1930's. At that time old age and unemployment payments were provided but a compulsory sickness insurance plan was not included. Since that time government officials, as well as little groups of physicians in our medical population, have continued to promote the concept that medical care in the United States is at a low point and that the only hope for the people is a nationwide compulsory sickness insurance plan. In his many years as President, Franklin Delano Roosevelt never sent to the Congress a recommendation for such a system, yet early in his succession, President Harry S. Truman went to the Congress with a five-point health program, of which compulsory sickness insurance is the most significant feature. The medical profession has indicated its favor for four of Mr. Truman's five points. We favor the widest possible extension of hospital

and health center facilities using government aid where the need can be shown. We favor the widest possible extension of public health services with special emphasis on maternal and infant care where the need can be shown. We support the concept of government aid to research and in the education of qualified young men who will maintain scientific advancement. The world has shown that coordinated and intensified research yields valuable dividends. We favor insurance against loss of wages due to illness. Thus the one proposal of President Truman's plan which almost all of the American medical profession oppose is compulsory sickness insurance.

The hearings that have been held in Washington have proved definitely that hardly more than 3,000 to 5,000 of the physicians of the United States are willing publicly to align themselves with support of this nationalized or political medicine. The vast majority of the physicians of the United States, including more than 127,000 physicians for whom the House of Delegates speaks, are opposed to the Wagner-Murray-Dingell bill which would make compulsory sickness insurance a part of our Social Security Program.

The evils of such a system of medical practice have been catalogued again and again. They include destruction of initiative, breakdown of mutual responsibility between doctor and patient, deterioration of medical service, inhibition of research, lowered standards of medical education, regimentation of thought and action. The system introduces into the distribution of medical services a vast lay bureaucracy which in some nations reaches one government employee for every 100 persons covered by the act. In the United States that would mean at least 1,000,000 new government employees. Even the most ardent proponents of such legislation are willing to grant the creation of a bureaucracy with at least 300,000 to 500,000 employees.

To meet the challenge of those who promote political medicine, the American Medical Association has taken a number of significant steps. These include the adoption of a 10-point national health program in which we call for a high standard of living with provision of minimum standards of food, fuel, clothing and shelter as being of vital significance in the maintenance of health. We encourage the development of preventive medicine, of adequate maternal and infant care, of medical education and research.

We urge every possible aid to the provision of a high quality of medical care for the veteran. Already in the United States plans have been developed which provide for the veteran's free choice of physician and of hospital care within his own community whenever possible. We urge a wide extension of education regarding health and disease. Finally, we promote the widest possible extension of voluntary insurance against the costs of sickness and hospitalization, recognizing that already more than 21,000,000 people are covered by voluntary hospitalization plans and that more than 23,000,000 additional people are covered in whole or in part by voluntary insurance against the costs of surgical operation, obstetrical service and medical catastrophes. Through the Council on Medical Service of the American Medical Association standards have been established for voluntary sickness insurance exactly as the Council on Pharmacy and Chemistry has established standards for drugs, the Council on Food and Nutrition for foods, the Council on Physical Medicine for physical devices. The Council on Medical Education and Hospitals has raised the standard of medical education and of hospital service in the United States to a point not now attained by any other nation in the world. Any plan which can meet the standards of the Council on Medical Service becomes eligible to participate in a voluntary corporation known as Associated Medical Care Plans, Inc., through which policies can be developed which will be effective in any state in the union where a suitable medical plan has been developed.

The curve of growth of these plans during the last two years, now that actuarial standards have been determined, represents one of the most rapid and intensive rises that economists have ever beheld. The American people have voluntarily purchased over \$40,000,000,000 worth of life insurance and 75,000,000 people in the United States are now covered by such insurance. Anything resembling equivalent coverage for sickness and hospitalization would make unnecessary any type of nationwide compulsory sickness insurance plan.

The proponents say that voluntary sickness insurance has always failed in other countries and that it has yielded in the end to governmentally controlled compulsory plans. We answer with the statement that democracy, too, has often failed in other countries but that we in the United States still live under a constitution and under a government which proposes to maintain the freedoms for which hundreds of thousands of Americans have given their lives in more than just a few wars.—From the bulletin "Voluntary Health Insurance vs. Compulsory Sickness Insurance," published by Council on Medical Service, A.M.A., 1946.

Mary Lou Spach, 15, a polio victim of Dexter, Iowa, is keeping up her school work through the magic of an intercommunication system between her home and the Dexter Public School.

TO THE MEMBERS OF THE AUXILIARY:

Again the Auxiliary has launched into a new year. This is a good time for rededication of purpose and loyalty, loyalty to those ideals which have always been representative of the true spirit of the medical profession, that of unselfish service to mankind.

The objectives set forth in our Constitution are broad in scope. It is well for us to stop a moment, now and then, to study and evaluate our achievements and failures in the light of these objectives. Much has been accomplished throughout the years of the Auxiliary's history, but there are many new fields of endeavor worthy of our consideration that could easily be incorporated into our activities without deviating from our primary aims and purposes. Standing at the cross roads, so to speak, the Auxiliary is facing the most challenging opportunity since its organization. It is for us to decide whether we will meet that challenge and be an influence in bringing about a glorious victory or just take a passive interest in the problems which are so vital to the medical profession and to the citizens of our great country at the present time.

Many of us at this time are assuming new responsibilities in the National, State and County Auxiliaries. All officers and committee chairmen are urged to study carefully their respective duties as they are listed in the Constitution and By-Laws. The success of the work of each individual officer and committee chairman depends largely on the correlation of activities with each other, and a general understanding of the duties of each office and committee makes for efficiency and assures a year of successful service. It is of utmost importance that each member who signifies her willingness to serve in any capacity be a working member, and that she feels her responsibility to the degree that she does her work conscientiously and at the proper time.

The postwar period is here and with it have come many seemingly new problems. There are social and economic adjustments to be made. One of the most important of these problems is the increasingly apparent need for some method whereby the public may protect itself against the economic catastrophe of serious illness. The medical profession, through its official body, the American Medical Association, is attempting to meet that need through its National Health Program and its Prepayment Medical Care Plans. It is logically sound to believe that this may be accomplished through a well organized program of public relations and public education. The Auxiliary has been asked to assist in putting such a program into effect.

Before it is possible to do effective work in any field, it is necessary to become familiar with and to understand the issues involved. It has therefore been recommended that the Auxiliary place its greatest emphasis this coming year on pending health legislation, the National Health Program and the Prepayment Medical Care Plans. If the Auxiliary is going to fulfill its obligation to the medical profession and to the public at large, every member must ac-

cept this as her individual responsibility. She must become so well acquainted with the details of the issues in question, that she can discuss the subjects intelligently and be able to relay the information to individuals or to groups whenever the opportunity presents itself. The Auxiliary membership can make its influence felt if every member will cooperate. Through unity of purpose and action, great accomplishments are possible.

Active interest must be continued in health education in its many phases. Hygeia plays an important part in many of the Auxiliary activities and will always be one of its major projects. The Bulletin and the Hand-Book are valuable and essential to progressive Auxiliary work. Continuous efforts should be made to increase the Auxiliary membership.

As we go forth into this new year, may we visualize the opportunities for service which stretch out before us. Through cooperation we shall reach our goal. Let us be faithful and loyal to our objectives and ideals and in so doing, we shall rise to new heights of endeavor in our Auxiliary undertakings and shall experience that personal satisfaction which can only come from knowing that a deed has been well done.—From *The Bulletin*, August, 1946.

Mrs. Jesse D. Hamer,
National President of the
Woman's Auxiliary to the A.M.A.

COOPERATIVE PROGRAM IN SERVING
HANDICAPPED CHILDREN

After conversations between representatives of the Iowa Society for Crippled Children and the Disabled and the Division of Special Education concerning features of the respective present programs of the two agencies the following suggestions are advanced:

1. That school workers in the several districts and counties and in the Division of Special Education shall at once, upon discovery, refer to the Society physically handicapped persons who need the assistance or counsel of the Society in any of the fields listed below. It is understood that the Society never duplicates resources otherwise available. When these seem indicated, proper referrals will be made by the Society. In other cases the Society's aid may be secured for:

- (a) Hearing aids—not under 12 years of age.
- (b) Eye treatments or glasses.
- (c) Crutches, braces, wheel chairs, or prosthetic devices.
- (d) Medical, dental, or surgical care or treatments.
- (e) Transportation and maintenance while receiving clinical service.
- (f) Foster home care while receiving medical or instructional service.
- (g) Hospital or tuition fees for care in out-of-state institutions (limit for residents of counties without a County Society \$100 per annum).
- (h) Recreational information, kits, or material for handicapped.
- (i) Vocational training for homebound, supplies, materials, and markets for their wares.

(j) Loan library service for parents or guardians of the cerebral-palsied.

(k) Enrollment in summer camps or day camps for the handicapped.

2. That each person of school age whose need of special education shall become apparent to any Society worker shall be at once referred to the city superintendent of schools concerned (5,000 population or over) or to the county superintendent of schools with all available pertinent information.

Special education service is available from the Division for persons of school age who are: (a) mal-adjusted or retarded, or have (b) speech difficulty; (c) physical handicap; (d) hearing loss; (e) visual defect.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p. m.

WSUI—Thursdays at 2:45 p. m.

January 1- 2	.....
January 8- 9	Problems of Rural Health J. E. McFarland, M.D.
January 15-16	Winter Skin Irritations Elmer A. Larsen, M.D.
January 22-23	Influenza L. W. Swanson, M.D.
January 29-30	Care of Throat Infections J. E. Reeder, Jr., M.D.

A number of requests have come in to the Speakers Bureau for medical films to be shown at county meetings. At least three weeks notice should be given the Speakers Bureau so that the films may be ordered in time for their use. Most of the films are obtained from agencies in Chicago or farther east.

NATIONAL FORMULARY VIII AVAILABLE

The Council of the American Pharmaceutical Association is pleased to announce that the new, completely revised and enlarged National Formulary became generally available on Dec. 15, 1946. This edition, the eighth published by the American Pharmaceutical Association since 1888, provides official specifications for many widely used drugs not previously included in either the United States Pharmacopoeia or the National Formulary. Copies of the new edition may be obtained from the Mack Publishing Company, 20th and Northampton Streets, Easton, Pennsylvania, at \$7.50 per copy.

Among 188 new admissions to the revised N. F. VIII are such drugs and preparations as Acetarsone, Alcohol Rubbing Compound, Aminoacetic Acid Elixir, Calcium Levulinate, Colloidal Silver Iodide, Ephedrine Sulfate and Phenobarbital Capsules, Ferrous Sulfate Syrup, Isopropyl Alcohol Rubbing Compound, Gentian Violet Jelly, Pentobarbital Elixir, Propylene Glycol, Sippy Powders, Stibophen, and a sun protective ointment.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

ALLERGY IN PRACTICE—By Samuel M. Feinberg, M.D., Associate Professor of Medicine and Chief of the Division of Allergy, Northwestern University Medical School; President, American Association for the Study of Allergy, 1942-1943; with the collaboration of OREN C. DURHAM, Chief Botanist, Abbott Laboratories, and CARL A. DRAGSTEDT, Ph.D., M.D., Professor and Chairman of the Department of Pharmacology, Northwestern University Medical School. The Year Book Publishers, Inc., Chicago; Second, Revised Edition, 1946. Price, \$10.50.

THE CHEST, A HANDBOOK OF ROENTGEN DIAGNOSIS—By Leo G. Rigler, M.D., Professor and Chief, Department of Radiology, University of Minnesota. The Year Book Publishers, Inc., Chicago, 1946. Price, \$6.50.

DIAGNOSIS AND TREATMENT OF MENSTRUAL DISORDERS AND STERILITY—By Charles Mazer, M.D., F.A.C.S., Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania; Gynecologist to the Mount Sinai Hospital, Philadelphia; and S. LEON ISRAEL, M.D., F.A.C.S., Instructor in Gynecology and Obstetrics, School of Medicine, University of Pennsylvania; Associate Gynecologist to the Mount Sinai Hospital, Philadelphia. Second edition. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York, 1946. Price, \$7.50.

THE DIFFERENTIAL DIAGNOSIS OF JAUNDICE—By Leon Schiff, Ph.D., M.D., Associate Professor of Medicine, Department of Internal Medicine, University of Cincinnati Medical School; Director, Gastric Laboratory, Cincinnati General Hospital. The Year Book Publishers, Inc., Chicago, 1946. Price, \$5.50.

INTRACRANIAL COMPLICATIONS OF EAR, NOSE AND THROAT INFECTIONS—By Hans Brunner, M.D., Associate Professor of Otolaryngology, University of Illinois College of Medicine, Chicago. The Year Book Publishers, Inc., Chicago, 1946. Price, \$6.75.

MEDICAL USES OF SOAP. A Symposium—By Rudolf L. Baer, M.D.; Irvin H. Bland, Ph.D.; Theodore Cornbleet, M.D.; Morris Fishbein, M.D.; G. Thomas Halberstadt, B.S.Ch.E.; Lester Hollander, M.D.; Edwin P. Jordan, M.D.; Daniel J. Kooyman, Ph.D.; C. Guy Lane, M.D.; Carey McCord, M.D.; Marion B. Sulzberger, M.D. J. B. Lippincott Company, Philadelphia, 1946. Price, \$3.

MUSCLE TESTING, Techniques of Manual Examination—By Lucille Daniels, M.D., Director and Associate Professor of Physical Therapy, Stanford University; MARIAN WILLIAMS, M.A., Assistant Professor of Physical Therapy, Stanford University; CATHERINE WORTHINGHAM, M.A., Director of Professional Education, The National Foundation for Infantile Paralysis, Inc. W. B. Saunders Company, Philadelphia, 1946. Price, \$2.50.

PENICILLIN, ITS PRACTICAL APPLICATION—By Sir Alexander Fleming, F.R.C.S., F.R.C.P., F.R.S., Nobel Prize Award, Discoverer of Penicillin; Professor of Bacteriology, University of London, St. Mary's Hospital; and twenty-eight contributors in special fields of medicine.

PRACTICAL MALARIOLOGY—Prepared under the auspices of the Division of Medical Sciences of the National Research Council, by PAUL F. RUSSELL, M.D., M.P.H., Colonel, M. O. A. U. S., Parasitology Division, the Army Medical School, Field Staff, International Health Division, Rockefeller Foundation (on leave); LUTHER S. WEST, Ph.D.; Head of Biology Department, Northern Michigan College of Education, Major, Sn.C., A. U. S. (Reserve); formerly Entomologist, Parasitology Division, Army Medical School; REGINALD D. MANWELL, Sc.D., Professor of Zoology, Syracuse University, New York; formerly Captain, Sn.C., A.U.S., Protozoology Section, Parasitology Division, Army Medical School. Foreword by RAYMOND B. FOSDIK, President of The Rockefeller Foundation, W. B. Saunders Company, Philadelphia, 1946. Price, \$8.

R K G RHEOCARDIOGRAPHY. A method of Circulation's Investigation and Diagnosis in Circular Motion; From the Nerve-Clinic of the University of Vienna Chief Prof. Dr. Otto Potzl; Information of the Developments Laboratory of the Clinic from the Physiological Institute of the University of Vienna; Leader Dr. Wolfgang Holzer from the Pharmacological Institute of the University of Vienna; Leader Dr. Wolfgang Holzer—By W. HOLZER, K. POLZER, and A. MARKO. Authorized English Translation by Mrs. Emma M. Kreidl, Vienna, former secretary of the A. M. A. of Vienna. Wilhelm Maudrich, Publisher, Vienna, Austria, 1946.

SEX EDUCATION: A Guide for Parents, Teachers and Youth Leaders—By Cyril Bibby, M.A., M.Sc., F.L.S. Education Officer to the Central Council of Health Education; Senior Lecturer at the College of St. Mark and St. John, London; sometime scholar of Queen's College, Cambridge. Emerson Books, Inc., New York, 1946. Price, \$2.50.

SEX PROBLEMS OF THE RETURNED VETERAN—By Howard Kitching, M.D., Foreword by Ernest R. Groves, Professor of Sociology, University of North Carolina. Emerson Books, Inc., New York, 1946. Price, \$1.50.

BOOK REVIEWS

ALLERGY IN PRACTICE

By Samuel M. Feinberg, M.D., Associate Professor of Medicine and Chief of the Division of Allergy, Northwestern University Medical School; President, American Association for the Study of Allergy, 1942-1943; with the collaboration of OREN C. DURHAM, Chief Botanist, Abbott Laboratories, and CARL A. DRAGSTEDT, Ph.D., M.D., Professor and Chairman of the Department of Pharmacology, Northwestern University Medical School. The Year Book Publishers, Inc., Chicago; second, revised edition, 1946. Price, \$10.50.

The author, recognizing the necessity of implementing the information contained in his first edition of his book on allergy because of the new and pertinent data in this field, has felt justified in writing a second edition.

This new volume, written in a scholarly style

that is both easy and relaxing to the reader, embraces within its 840 pages a thoroughly comprehensive and detailed discussion of all the facts in allergy.

Singularly noteworthy is the practical yet lucid and down-to-earth approach with which the author treats the various subjects enclosed between the covers. Each chapter is presented with crystal-clear clarity and conciseness, lacking much of the pseudo-scientific embroidery and ponderous verbiage that so often encumber the effectiveness of the reading material.

This edition is remarkably well drafted in its sequence of chapters and subject matter, from its well balanced and proportioned chapter on "Hypersensitiveness in Animals and Man" to the final chapter of "Histamine Antagonists." The last two chapters dealing with the subject matter of histamine in "Anaphylaxis and Allergy," and "Histamine Antagonists" have greatly enhanced the value and im-

portance of this particular edition because of the furor created by the introduction of antihistaminic drugs in the treatment of allergic manifestations.

One of the highlights of this book is the chapter written with such eminent authority on the subject of "Allergy to Fungi." It is perhaps no exaggeration to say that, because of the completeness and detail of this chapter in describing mold surveys and their identities, its graphic illustrations, microphotographs, and the tables of classifications of the various molds, it is without a peer in the present day literature in allergy.

This book is further distinguished by its excellent chapter, "Pollen and Pollen Allergy," written by O. C. Durham, chief botanist of the Abbott Laboratories. In it he describes in vivid detail the results of the pollen surveys throughout each state and illustrates beautifully the distribution and classification of the various botanical pollens and plants by the use of excellent charts and photographs. A wispy resumé concludes each chapter in the book.

This is a really good, up-to-date book on allergy and should be on the book shelf of every individual interested in that subject.

L. J. N.

PRACTICAL MALARIOLOGY -

Prepared under the auspices of the Division of Medical Sciences of the National Research Council, by PAUL F. RUSSELL, M.D., M. P. H., Colonel, M. C., A. U. S., Parasitology Division, The Army Medical School. Field Staff, International Health Division, Rockefeller Foundation (on leave); LUTHER S. WEST, Ph.D., Head of Biology Department, Northern Michigan College of Education. Major, Sn. C., A. U. S. (Reserve); formerly Entomologist, Parasitology Division, Army Medical School; REGINALD D. MANWELL, Sc. D., Professor of Zoology, Syracuse University, New York; formerly Captain, Sn. C., A. U. S., Protozoology Section, Parasitology Division, Army Medical School. Foreword by RAYMOND B. FOSDICK, President of The Rockefeller Foundation. W. B. Saunders Company, Philadelphia, 1946. Price, \$8.00.

It has recently been estimated by Captain J. J. Saper of the Navy Medical Corps, who served as Malaria Control Officer for the Pacific Ocean Areas, that approximately a million admissions to the sick list for malaria were made by the American armed forces during the war. The impetus given to the study of malaria by the demands of military medicine has resulted in this comprehensive volume, one of a series of military medical manuals. Work on this book was undertaken in the closing months of the war and completed after the close of hostilities,

so that, as its authors point out, it has been written primarily from the standpoint of civilian needs.

Following a historical survey, the text undertakes a methodical consideration of the parasite, the vector, the individual human victim, the community, prophylaxis and control, and therapeutic malaria. A detailed classification of world anophelines and a comprehensive index are supplied. The work is lavishly illustrated with 238 plates, including eight in color. Enhancing the value of the volume from the standpoint of the entomologist and the epidemiologist are detailed descriptions of laboratory technic, mosquito identification, and public health measures for mosquito control.

H. J. S.

SEX PROBLEMS OF THE RETURNED VETERAN

By Howard Kitching, M.D. Foreword by ERNEST R. GRAVES, Professor of Sociology, University of North Carolina. Emerson Books, Inc., New York, 1946. Price, \$1.50.

This small volume can be read by anyone, anyone capable of understanding two-syllable words, with understanding, appreciation and sincerity. No specialized vocabulary or insight into human nature is necessary—only interest and to have lived a few years.

Beginning with "The Goal of Marriage" and continuing through "Separation," the "Dilemma" of husband and wife and ending, after viewing the "Prospect of Reunion," with "Reunion in Reality," the book is an honest attempt to take a common sense attitude toward the returning service man's sexual problems.

The problems of a returning serviceman (and, to my mind, many others to whom this work is equally applicable) are never exclusively in one "sphere" of activity alone. Persistent maladjustments which defy solution by time, care and understanding are indicative of underlying and previously unrecognized unstable adjustments. This point, while recognized by the author, and indicated in several places in the book, remains insufficiently stressed, leaving the casual reader, I believe, with a feeling of over-simplification and still without sufficient knowledge to help himself or his friends. This problem always arises, however, in any book written for the layman.

On the other hand, the very lack of the tendency to follow all the various ramifications of personality maladjustment produces a clearly understandable and readily readable book which approaches its problem with considerable sincerity of purpose.

The presence of this book in the waiting room will answer many of the questions that patients may or may not have the temerity to ask.

H. V. T.

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk County

The annual business meeting of the Black Hawk County Medical Society was held at 6:30 p. m. in Black's Tea Room, Waterloo, on December 17. There was election of officers following which a brief program was presented.

Bremer County

The Bremer County Medical Society met on November 20 at the St. Joseph Mercy Hospital, Waverly. The following officers were elected for 1947; R. E. Shaw, M.D., Waverly, president; E. H. Stumme, M.D., Denver, vice president; O. S. Blum, M.D., Waverly, secretary; F. R. Sparks, M.D., Waverly, delegate; P. J. Amlie, M.D., Waverly, alternate. Robert L. Parker, M.D., president of the Iowa State Medical Society, delivered an address on "State Medical Service Program and the Care of Veterans." This was followed by an address by Channing Smith, M.D., Medical Supervisor of Vocational Rehabilitation and Iowa State Social Welfare Department, whose subject was "Medical Care of Old Age Recipients, and the State Rehabilitation Program."

Cerro Gordo County

The Cerro Gordo County Medical Society held its regular meeting in Hotel Hanford December 10 at 6:30 p. m., with A. B. Phillips, M.D., presiding. Lawrence J. Halpin, M.D., of Cedar Rapids spoke on "Management of Bronchial Asthma." Officers elected for 1947 were: Ralph E. Smiley, M.D., president; Draper L. Long, vice president; James W. Lannon, M.D., secretary; Harry G. Marinos, M.D., treasurer; Carroll O. Adams, M.D., delegate; and Harold W. Morgan, M.D., alternate delegate. All are of Mason City.

Clinton County

Robert J. Nelson, M.D., of Clinton was elected president of the Clinton County Medical Society at the group's meeting in Jane Lamb Hospital, Clinton, December 5. J. A. Graham, M.D., was named secretary. Following election, the x-ray program for school children was discussed.

Crawford County

C. L. Sievers, M.D., of Denison was elected president of the Crawford County Medical Society at the first postwar meeting of the organization held in November. Other officers elected were: R. A. Hu-

ber, M.D., Charter Oak, vice president; C. Dudley Miller, M.D., Denison, secretary-treasurer; Clair L. LeMar, M.D., Dow City, delegate; and James V. Yackley, M.D., Denison, alternate delegate.

Dallas-Guthrie Medical Society

Members of the Dallas-Guthrie Medical Society and their wives met at the Guthrie Center city hall November 20 for a dinner and card party honoring the doctors who served in World War II.

Decatur County

The regular meeting of the Decatur County Medical Society was held at the Decatur County Hospital following a seven o'clock dinner at the Painter Tea Room, Leon. Guests from Wayne, Clark, Ringgold, and Appanoose Counties attended the meeting. The scientific program was presented by E. S. Judd, M.D., of the Section of Surgery, Mayo Clinic, who spoke on "Surgical Treatment of Duodenal Ulcer," and W. A. Merritt, M.D., of the Section of Medicine, Mayo Clinic, who spoke on "Infectious Hepatitis."

Fayette County

The Fayette County Medical Society was host to the Buchanan, Clayton, and Winneshiek County Medical Societies at Hotel Mealey, Oelwein, November 21. Following a 6:30 o'clock dinner, C. W. Seibert, M.D., of Waterloo, spoke on "Modern Treatments of Obstetrical Problems."

Henry County

The Henry County Medical Society met at the Harlan Hotel November 29, with two members of the Memorial Hospital board, C. M. Vance, chairman, and Mrs. Wayne Peterson, as guests. Following dinner, a discussion of problems relating to the hospital was held.

Johnson County

The Johnson County Medical Society met at Hotel Jefferson, Iowa City, December 4 at 6 p. m. Officers elected were: Rubin H. Flocks, M.D., Iowa City, president; W. M. Spear, M.D., Oakdale, vice president; Robert C. Hardin, M.D., Iowa City, secretary-treasurer; A. W. Bennett, M.D., Stuart C. Cullen, M.D., and John W. Dulin, M.D., delegates; and Ralph A. Dorner, M.D., Andrew C. Garvy, Jr., M.D., and Carl L. Gillies, M.D., alternate delegates. The scientific program consisted of introductory remarks by Wilbur R. Miller, M.D., head of the Department of Psychiatry at University Hospitals,

on psychosomatic medicine. This was followed by a discussion of the theoretical aspects of the subject by Jacques Gottlieb, M.D., associate professor in the Department of Psychiatry, and the clinical applications by Frank Coburn, M.D., assistant professor of the Department of Psychiatry.

Lee County

The Lee County Medical Society held its regular quarterly meeting November 20 at 2 p. m. in the Anthes Hotel, Fort Madison. Two staff physicians from the Mayo Clinic, Rochester, Minn., spoke. They were A. E. Brown, M.D., whose subject was "The Diagnosis and Treatment of Some of the Obscure Fevers," and J. Arnold Bargen, M.D., whose subject was "The Problem of Diagnosis and Management of Malignant Lesions of the Intestines." Following the clinical meeting, the following officers were elected: John Saar, M.D., Donnellson, president; F. L. Poepsel, M.D., West Point, vice president; and B. D. VanWerden, M.D., Keokuk, secretary-treasurer.

Marion County

Members of the Marion County Medical Society and their wives met in Jordan Hall on Central College campus, Pella, at 6 p. m. December 4. Following a banquet served by the college home economics students, Chaplain Arnold Schmidt of the Veterans Hospital, Knoxville, spoke on "Japanese Hygiene and Hospitalization." F. A. Coleman, M.D., of Des Moines presented a talk on "The Rh Factor as It Concerns Blood Transfusions and Pregnancies." Informal talks were given by C. I. Fox, M.D., of Pella, and E. C. McClure, M.D., of Bussey.

Marshall County

Officers elected at the Marshall County Medical Society meeting December 3 were: Willard P. Marble, M.D., president; P. L. Marble, M.D., Liscomb, vice president; J. T. McCann, M.D., secretary-treasurer; Otis D. Wolfe, M.D., delegate; and Earl L. Keyser, M.D., alternate delegate. All are of Marshalltown with the exception of Dr. Marble of Liscomb. Speaker for the evening was Everett M. George, M.D., of Des Moines whose subject was "Low Back Pain." He illustrated his talk with motion pictures and slides. Robert L. Parker, M.D., of Des Moines, a guest, gave an extemporaneous talk.

Muscatine County

Members of the Muscatine County Medical Society entertained their wives at a dinner at Hotel Muscatine November 14. New members of the organization were introduced.

Polk County

The Polk County Medical Society met in conjunction with the Broadlawns attending staff on November 20 at Broadlawns General Hospital, Des Moines.

Following a six o'clock dinner, E. T. Bell, M.D., Professor and Head of the Department of Pathology at the University of Minnesota Medical School and Postgraduate School, presented a paper on "Primary Hypertension."

The December meeting was held at the Veterans Administration Hospital December 18. Following a 6:30 o'clock dinner, a program on Buerger's Disease was presented. Herman J. Smith, M.D., discussed the etiology, diagnosis and medical treatment; Louis T. Palumbo, M.D., the surgery; and Kenneth R. Cross, M.D., the pathology.

Sac County

J. H. Stalford, M.D., of Sac City was the principal speaker at the dinner program of the Sac County Medical Association at the group's November meeting in Odebolt. They honored August Groman, M.D., of that city on his ninetieth birthday.

Scott County

The December meeting of the Scott County Medical Society was held at the Lend-a-Hand Club, Davenport on December 3 with dinner being served at 6:30 p. m. Warren O. Nelson, M.D., Professor of Anatomy in the College of Medicine at the State University of Iowa, spoke on "Practical Application of Endocrinology."

Woodbury County

The Woodbury County Medical Society met November 26 at the Mayfair Hotel, Sioux City, for a 6:30 o'clock dinner. The scientific program consisted of a talk on "Newer Methods of Diagnosis and Treatment of Venereal Diseases" by R. M. Sorenson, M.D., Director of the Venereal Disease Control Division of the Iowa State Department of Health.

PERSONALS

Dr. K. E. Arnold, recently released from the Navy Medical Corps, has located in Leeds. Dr. Arnold is a graduate of Creighton University College of Medicine, Omaha, Neb.

Dr. Grant Augustine of Council Bluffs retired from active practice December 15 after forty-six years of service as a physician and surgeon. He had practiced in Council Bluffs since 1919, coming there from Minden. Dr. Augustine plans to travel, visiting his son and daughter in the East in the spring.

Dr. M. E. Barnes, head of the Department of Hygiene and Preventive Medicine at the State University of Iowa, was elected chairman of the national conference of professors of preventive medicine for the coming year at a recent meeting of the American Public Health Association in Cleveland, Ohio. Dr. I. H. Borts was elected vice chair-

man of the conference of the state and provincial public health laboratory directors for next year at the same meeting.

Dr. W. Norman Doss of Leon left December 1 for Tulane University, New Orleans, La., where he took a two weeks' postgraduate course in radiology.

Dr. L. W. Eller, who practiced medicine in the Kanawha community for three years, before entering the Army Medical Corps in June, 1942, will locate in Kanawha again for the practice of medicine. Dr. Eller served as a Captain in the Medical Corps in Italy.

Dr. Howard H. Gessford of Omaha, Neb., opened offices for the practice of medicine in George on December 2. Dr. Gessford, who is a graduate of the University of Nebraska College of Medicine, served twenty-eight months as a Captain in the Army Medical Corps.

Dr. John F. Gray, Jr. of Melcher, who was discharged from the Army Medical Corps in August, is now doing a fellowship in psychiatry at the "Institute of Living," formally the Neuro-psychiatric Institute of the Hartford Retreat.

Dr. Walter E. Herrick, a graduate of the Marquette University School of Medicine at Milwaukee, Wis., has announced that he will be associated with Dr. Sidney Brody in the practice of medicine and surgery in Ottumwa. Dr. Herrick was discharged from the armed forces this year following four years of service. At the time of his separation he held the rank of major.

Dr. Walter Kirch, recently released from active duty with the Navy Medical Corps, with the rank of lieutenant commander, opened offices in the Bankers Trust Building, Des Moines, in November. Dr. Kirch, who began practice in Des Moines in 1933, specializes in diseases of the eye, ear, nose, and throat.

Dr. J. I. Limburg, Jr., city health officer in Jefferson, recently spoke at the Rotary Club of that city on the state public health department and on preventive medicine as it was practiced in the army during the war in the Pacific.

Dr. Edson E. Moore has joined the staff of Lutheran Hospital in Fort Dodge as radiologist, having charge of all x-ray and therapy work. A native of Osage, Dr. Moore received his medical degree from the University of Iowa College of Medicine and served four and one-half years in the Army Medical Corps.

Dr. John J. Mueller, formerly of Dubuque, recently moved to LaCrosse, Wis., where he joined the staff of the St. Francis Hospital there as urologist. Dr. Mueller was discharged from the Army Medical Corps after serving two years as urologist with an evacuation hospital in the European theater.

Dr. Robert C. Painter has started a fellowship in medicine at the Mayo Clinic, Rochester, Minn. He was formerly at Cheyenne, Wyo.

Dr. Ronald Rooks of the University of Iowa Department of Hygiene and Preventive Medicine spoke to the Rotary Club in Iowa City on hay fever recently. He stressed that reduction of pollen quantity in that city would be a matter of cooperation among citizens, the city government, university and railroad. He explained the use of masks and window type filters.

Dr. Herbert Shulman, formerly of Iowa City, opened offices for the practice of medicine in Waterloo December 2. Dr. Shulman was separated from the Army Medical Corps in December, 1945, following four and one-half years of service, and took nine months' residency in medicine at Wisconsin General Hospital, Madison, Wis. His practice will be limited to internal medicine.

Dr. Lynn W. Thompson, anesthesiologist at the Atlantic Memorial Hospital, was appointed to the faculty of the University of Nebraska College of Medicine in November. Dr. Thompson is continuing his work at the hospital, devoting one day per week to his teaching duties.

Dr. W. E. Walsh of Hawkeye resumed the practice of medicine and surgery in West Union following three years of service in the Navy Medical Corps.

Dr. Martin Van Patten, who recently returned from Minneapolis where he took postgraduate work in medicine at the University of Minnesota, has resumed his association with Dr. E. F. Beeh and Dr. W. B. McTaggart in the practice of medicine and surgery in Fort Dodge. He served for more than three years with the air corps, receiving his discharge in 1945.

Dr. E. G. Zimmerer of Des Moines spoke to the Oelwein senior high school students on cancer December 4. He cited the prevalence of the disease, the early signs, and the treatments for it.

DEATH NOTICES

Besser, Edward Francis, aged 71, of Newton, died November 21 of a heart attack at his home. He was graduated from the University of Illinois College of Medicine, Chicago, in 1900. Dr. Besser was a member of the Jasper County and Iowa State Medical Societies at the time of his death.

Miller, Johannes Jacobas, aged 71, of Ackley, died December 4 of a heart attack. He was graduated from the Northwestern University Medical School, Chicago, in 1899, and at the time of his death was a member of the Hardin County and Iowa State Medical Societies.

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HEADACHE FROM THE STANDPOINT OF THE OTOLARYNGOLOGIST*

Henry L. Williams, M.D., Rochester, Minn.

Because headache means to many patients the presence of sinusitis the differential diagnosis of this condition has become of unusual importance to the rhinologist, but since headache can be the result of so many diverse conditions this feat is by no means easy to accomplish. So much has been written about headache by so many authors that there has gradually grown up no little confusion as to terminology and description of symptoms. I felt that some simplification was possible, especially since the work of Lewis¹ and Wolff and his co-workers²⁻⁶ has clarified so much that was unknown about the subject.

I felt that a new approach could be made to the subject of headache by considering it from the standpoint of the pain-sensitive structures of the head and the way in which they may be stimulated to produce the symptom of headache by various mechanical, physiologic and disease conditions.

So far as intensive investigations by Lewis and Wolff and his associates¹⁻⁷ have been able to demonstrate, the pain-sensitive structures of the head exclusive of the sensory nerves are: (1) the nasal mucosa, especially in the region of the ostia of the sinuses; (2) the mucosa lining the accessory sinuses of the nose; (3) the larger extracranial and intracranial blood vessels and the adjacent dura; (4) the fibrous tissues about the head and neck; (5) the muscular tissues about the head and neck.

Before proceeding further with this discussion it is best to consider what is meant by the term "headache," since the average patient and even physician is by no means clear as to what this term implies. In this paper headache will be considered to be pain felt to be inside the head. This will eliminate from discussion many indefinite

sensations felt in the head and variously described by the patient as a feeling of a tight band around the head, the feeling of a brick pressing on the forehead or vertex, a sensation as though the head were expanding and the like, all of which are frequently stated by patients to be headaches.

An attempt also should be made to define the meaning of the word "pain." This sensation can be defined only by comparing it to some experience common to both the patient and the examiner, and patients frequently find it difficult to discover a simile to describe the sensation they are experiencing.

Lewis⁸ divided pain into two types: superficial or skin pain and deep or muscle pain. He found that the pains originating from skin, mucous membrane, tendon and superficial fibrous tissue had a bright burning quality, were associated with brisk movement, a rise in pulse rate and a sense of invigoration, and awaken quick protective reflexes. Lewis stated that superficial pain located the seat of mischief with great precision, and while there were many variations in intensity there was no variation in the quality of pain originating in superficial tissues, however the pain was produced, whether by stimulation of nerve endings, skin or fibrous tissue. Patients frequently describe this type of pain as burning. Lewis found that the pain originating from muscle and blood vessels, "deep pain," was of an entirely different quality. He found that deep pain was disagreeable and continuous; its quality was indescribable but the pain was distinctive. It was impossible to confuse pain from skin and pain from muscle. Deep pains are often described as of a boring, aching character and are associated with quiescence, with slowing of the pulse, a fall in blood pressure and nausea, the last phenomenon being responsible for the common designation, "sickening," which is applied to this but never to superficial pain. Most important of all, deep pain often does not exactly localize the seat of the mischief but may be referred to a distance. The pain does not ap-

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pear to be referred to areas of skin but rather to deep structures, and appears to be confused by the subject with pain arising directly from such structures. The pattern of reference of deep pain⁹ is not that of the segmental innervation of the skin but appears to follow a myotomic distribution.

Lewis stated that the difference between the quality of superficial pain and the quality of deep pain is so clear, the quality of the former so exclusive to skin and mucous membrane and of the latter to deep structures, that it is possibly erroneous to classify both together under the word "pain." These two sensations have not been shown to possess the common properties which the use of a single term would imply.

The distinction between the two qualities of pain has been emphasized because if the physician can be sure of which type of pain the patient is complaining the problem of differential diagnosis is simplified. This also draws attention to the supreme importance of an adequate history in considering any patient who presents himself with the complaint of headache. The following outline has been found useful in taking the history of a patient who has headache.

1. The age at onset and the circumstances surrounding the first appearance of the headache should be determined. Problems of emotional adjustment should be inquired into and the association with physiologic alterations, such as puberty and the menopause, and with severe physical exposures or infections should be ascertained.

2. The patient should be asked to describe the quality of the pain. If of the deep type, regions of reference should be sought after.

3. The patient should be asked to point out definitely the location of the headache, whether unilateral, bilateral or alternating, and whether the pain tends to recur in the same or different locations.

4. The patient should be asked if any definite stimuli, such as atmospheric changes, changes of cutaneous temperature, emotional upsets, fatigue, use of the eyes, the ingestion of certain foods, physiologic changes such as menstruation, frequent copious urination, excessive sleep and the like, are associated with exacerbations of the headache.

5. The type of onset of the headache should be inquired into, whether sudden in onset and termination, or slowly rising to a crisis and slowly subsiding. It should be determined whether the pain has pulsating quality. The patient should be questioned regarding the effect of position of the body on the severity of the pain. An attempt

should be made to ascertain the intensity of the headache.

6. The effect of drugs in relieving the headache should be inquired into, and whether the pain is lessened or increased by mild exercise and whether the headache varies during the day.

Headaches Due to Irritation of the Nasal and Sinusal Mucosa: Contact Headache

McAuliffe, Goodell and Wolff¹⁰ have found the headache associated with both acute and chronic sinusitis to be of the deep type, nonpulsating but not referred and of a low order of intensity. On stimulating the mucosa of the nasal chambers and sinuses these authors found that pain of two types was produced: first, a localized, burning pain; second, a deep type of pain, referred to the temple and zygomatic region of the homolateral side, together with hyperalgesia of the skin and a faint capillary dilatation on the homolateral side of the face. This type of persistent hyperalgesia following stimulation of the mucosal lining of the sinuses was originally described by Lewis¹¹ and attributed by him to some process set up by the original injury, such as the release of stable chemical products (or a change in the skin whereby such release occurs and is maintained) when stimuli reach the hyperalgesic area through the effector endings concerned. Tower¹² offered evidence that the stimuli are transmitted by the nerve apparatus subserving pain. In the experiments of McAuliffe, Goodell and Wolff¹⁰ no attempt was made to distinguish these three separate sensations.

In his study of the effect of the pain produced by subjecting the sinusal mucosa to positive and negative pressures Behnke¹³ stated that relative negative pressure causing a superficial engorgement of the mucosa produced a superficial, burning, localized type of pain whereas relative positive pressure affecting the deeper structures in the submucosa produced a deep, referred type of pain. These findings in respect to the effect of positive pressure agree with those of McAuliffe, Goodell and Wolff produced by inflating a rubber balloon in the sinuses. The effect of negative pressure is in agreement with clinical experience in that the pain in the very early stage of acute rhinitis or sinusitis differs in its quality from that at a later stage in the disease. At first the pain is of an acute, burning type, well localized, and it is noteworthy that while the nasal or sinusal mucosa at this stage is actively reddened and engorged, there is no secretion in the nasal chambers or in the sinus, and roentgenographic studies at this stage give no evidence of mucosal involvement in the sinus. At a later stage in the disease the pain

becomes deep, throbbing and referred. At this stage the lining mucosa can be found to be thickened, and the sinus begins to contain a purulent secretion.

I have never found the superficial, burning type of pain to be associated with chronic sinusitis.

The hyperalgesia described by Lewis¹¹ and by McAuliffe, Goodell and Wolff is, according to Lewis, a type of "sensitization" similar to erythralgic hyperalgesia but less in degree. This sensitized state in the skin in the region to which the reference of pain occurs, namely the malar region of the face, may explain the annoying recurrence of pain on exposure of the patient to the "alarming" stimuli described by Selye¹⁴ after the disorder originally producing the sensitization has been eliminated.

The paper of McAuliffe, Goodell and Wolff is especially valuable in demonstrating the regions of reference of pains originating from irritation of various regions of the nasal chambers and sinuses. Stimulation of the antero-inferior portion of the nasal septum, the lateral wall of the maxillary sinus, the middle and inferior turbinates, and the ostium of the maxillary sinus produced a reference of pain as a rule to the malar and zygomatic regions of the homolateral side, while stimulation of the superior portion of the nasal cavity produced reference of pain to the eye, the infra-orbital region and the region of the nasion. Stimulation of the mucosa of the sphenoid produced a slight degree of pain at the vertex of the skull.

Eagleton¹⁵ has pointed out that reference of pain to the nuchal region, so often described as characteristic of sphenoiditis, occurs only when the sphenoid basis and occipital basis are involved in osteomyelitis. Druss¹⁶ has noted reference of pain to this region when Rathke's pouch is involved in an inflammatory process. McAuliffe, Goodell and Wolff noted that while engorgement of the turbinates was a major factor in the headache of sinus disease, the major factor in producing such pain was not increased venous pressure but pressure of two mucosal surfaces. They further stated that the alleviation of pain is sinusitis depends on decongestion of the structures in the nasal chambers, and that the removal of secretions and growths from the interior of the sinus is of little value as far as pain is concerned and is to be avoided. Anyone with wide clinical experience can think of occasional exceptions to these statements, but it must also be recognized that in general they are true. McAuliffe, Goodell and Wolff also refer to the fact that secondary vasodilatation and reactive hyperemia of the nasal structures after the use of vasoconstrictors in the

nasal chambers may cause recurrence of headache. They also noted the effect of emotional states on engorgement of the turbinates and stated that the time and posture symptoms associated with so-called sinus disease are really more closely related to activity, work and stress than to time, posture or gravity. In other words, the more investigative work that is done on the subject of "sinus headache" the more evident it becomes that with infrequent exceptions sinusitis, especially the chronic type, is usually a painless disease. If a patient complains chiefly of headache the probability that sinusitis is present is small. The rhinologist should be on his guard, however, against the exceptional case.

The headaches resulting from nasal and paranasal structures may be classified and suitable treatment given as stated in the following paragraphs.

1. *Nasal contact headaches which can be relieved temporarily by cocaineization of various areas of the nasal chambers:* If the headache is relieved by anesthetization of the nasal mucosa, occasionally it may be relieved permanently by surgical removal of septal deflections or spurs. If the headache is owing to acute or chronic engorgement of the nasal mucosa, particularly that over the turbinates, attempts at decongestion should be made. Use of vasoconstrictors should be avoided, especially in chronic congestion, because of the secondary vasodilatation which follows, usually with an accentuation of symptoms. There are, of course, certain situations such as nasal congestion in nurslings, in which the use of vasoconstrictor drugs is justified. Rest in bed in a nonirritating environment with head elevated is helpful in reducing nasal congestion in acute infections of the upper part of the respiratory tract. In turgescence owing to subacute inflammations of the upper part of the respiratory tract the use of the Dowling pack is indicated, as this will produce a cumulative shrinkage without secondary vasodilatation. The alleged deleterious effect of the Dowling pack in producing injury to ciliary activity has not been observed in my practice.

If the turgescence of the nasal mucosa is secondary to chronic sinusitis, suitable procedures to clear up the sinusitis should be instituted.

If the nasal congestion is on an allergic basis, an attempt should be made to discover the exciting cause and eliminate it. If this proves impossible, nonspecific treatment with vasodilators may be instituted or temporary destruction by cauterization of the vasodilator and secretomotor fibers to the nasal mucosa may give relief.

2. *Headaches due to pressure within a sinus:* In spite of experimental evidence to the contrary, a severe headache produced by the pressure of inspissated pus, an osteoma or a mucocele in a sinus is observed occasionally. In these exceptional cases suitably directed surgical treatment will give permanent relief to headache.

While nearly all the head pains arising from the nasal and sinusal mucosa are of the deep, referred type, in the early stages of acute rhinitis and sinusitis a localized burning type of pain is present. "Sensitization" of the skin and other tissues of the region to which the deep pain is referred may take place. This may account for some instances of persistent pain which is present in patients in whom the irritating suppurative disease apparently has cleared up.

Headache Arising From Muscular and Fibrous Structures About the Head

1. *Muscle tension headache:* While Simons, Day, Goodell and Wolff have shown that sustained pain in the head will produce a chronic state of tension in the muscles of the head and neck which can be a secondary source of pain, a more frequent cause of headache arising from muscles of the head and neck is continued muscle tension secondary to an anxiety state, usually termed anxiety tension state. In this condition the muscles of the body, especially those of the shoulder girdle and neck, are maintained in a state of hypertonicity and after a time will produce an occipital headache referred upward and forward toward the vertex. Variation in the muscle tension headache depends on the emotional state of the patient. Often occupations that distract the patient from his adjustment problem will give relief to the pain, while rest in bed, if accompanied by sleeplessness and useless concentration on the problem, frequently will result in accentuation of the pain.

During various states of fatigue, exhaustion, undernourishment and nervousness, physicians commonly prescribe rest without instructing the patient how to rest effectively. The patient may be apparently quiet for hours, yet remain sleepless, emotional or otherwise nervously restless. Progressive relaxation is a term applied to a method of physical therapy used to quiet the muscular and nervous systems, including the mind. The lack of ability to relax is a condition which has been described by Rathbone as residual neuromuscular hypertension. Patients of the nervous type very often complain of a dull ache in the back of the neck with reference toward the vertex. This is the so-called neurasthenic headache, which

appears in all states of chronic fatigue and always precedes exhaustion. This type of headache is so frequently ascribed by patients to sinusitis that its recognition is of great importance to the rhinologist. Jacobson has described in detail the procedures necessary for correction of this condition. He called the procedures "progressive muscular relaxation." This type of headache usually is associated with mild, generalized soreness in the muscles of the back of the neck. Psychotherapy is often a necessary adjuvant.

A similar type of pain may be produced in any person who is forced to hold the head in a particular position by the condition of his occupation. This is commonly seen in truck drivers, typists and business machine workers who hold the head more or less rigidly throughout the day. Muscles are not designed for continuous, tonic contraction and in the normal person frequent changes in the position of the head transfer the strain of holding the head erect from one muscle group to another and prevent the accumulation of chemical substances capable of irritating the endings subserving pain.

2. *Fatigue headache:* The daily work of some persons causes an accumulation of pain-producing substances in their muscles, particularly in the back and neck. Such persons frequently exhibit an exacerbation of pain in the late morning, relieved by lunch, and another exacerbation in the late afternoon, relieved by the evening meal.

3. *Primary fibrositis:* This is a clinical condition of unknown origin in which localized, painful regions may appear in and around the scalp and head. The painful regions are well localized, tend to come and go, but do not often recur in the same location. The pain tends to be of a bright, burning character and the scalp is frequently sensitive to light manipulation such as brushing the hair. The pain is well localized.

4. *Secondary fibrositis:* In this condition there may be pain in the fibrous tissues and attachments of muscles secondary to arthritic changes in the cervical portion of the spinal column. This headache is well localized to the back of the neck and occipital region with tenderness well localized to muscular attachments along the occipital line. The patients usually describe a sensation similar to a hot poker in the site of pain if the pain is severe.

Both primary and secondary fibrositis tend to exacerbations during cold, damp weather and are somewhat sensitive to chilling.

Persons who have fibrositis exhibit stiffening with disuse and relief by mild exercise. If subjected to severe exercise the pain is likely to increase and to be relieved by rest. Salicylates

relieve all the headaches described in previous paragraphs but they have an apparently spectacular effect in fibrositis.

5. *Myalgia of the head*: Myalgia of the head is a headache originating in muscle, apparently on the basis of a physical or intrinsic allergy. The mechanism of this type of allergy is entirely different from that present in the antigen-antibody type of allergy, but since both physiologic mechanisms result in the release of histamine into the tissue spaces, the clinical picture is frequently indistinguishable. Physical or intrinsic allergy is probably the more common of the two types. Like antigen-antibody allergy it probably is the perversion of a normal defense mechanism, in this instance the "alarm" reaction described by Selye. Selye has stated that the organism normally reacts on exposure to alarming stimuli, such as change of temperature, fatigue and emotional stress, with the release of histamine into the tissue spaces. Selye found that this reaction failed to take place in adrenalectomized animals. Cannon²⁰ demonstrated that the secretions of the adrenal medulla were also increased by exposure of the animal to the same alarming stimuli.

It is reasonable to assume, therefore, since histamine and epinephrine are known physiologic antagonists, that we are dealing with a normal defense mechanism acting through the autonomic-adrenal system. Lewis and Hess²¹ have demonstrated that in tissues subjected to injury a sensitized state will be produced in which, after a latent period, further exposure to such a stimulus will result in the release of a pain-producing substance which the work of Horton and Roth²²⁻²⁴ has shown to be, in all probability, histamine. This may be the manner in which the normal "alarm" reaction of Selye becomes perverted. Müller²⁵ has shown that in persons sensitized to emotional or physical stimuli following the preferred stimulus an abnormal capillary reaction takes place in the reacting regions. In the reacting region here and there groups of capillaries will cease to function normally. The arterial loop of the capillary becomes threadlike, the lock muscle at the beginning of the loop being thrown into tetanic contraction. The intermediate portion of the loop becomes grossly dilated and the venous portion of the loop becomes varicose. The epithelium of the loop becomes swollen and hazy, presenting the picture of injury. Rose,²⁶ Katz²⁷ and others have shown that leukocytes in the fluid withdrawn from wheals, probably produced by such a capillary change, contain abnormal quantities of histamine. Müller found such a capillary picture present in vasomotor rhinitis, scleroderma, migraine, chronic

ulcerative colitis and other conditions that he classified as being due to physical allergy. O'Leary²⁸ has confirmed the picture in the case of scleroderma and Redisch and Pelzer²⁹ confirmed it in migraine. Lewis and Hess²¹ pointed out that such sensitization of tissue is more easily accomplished in the presence of infection than in other circumstances.

When sensitized regions reacting to physical or emotional stimuli appear in the muscles of the head and neck, the clinical condition known as "myalgia of the head" is produced. This is a condition characterized by the recurring presence of isolated firm regions in the body of certain muscles in the head and neck. It is characteristic that these tender regions tend to recur in the same locations. In "attacks" of myalgia these regions become increasingly tender and produce pains referred to a distance in a distribution not that of the cutaneous nerves, but rather in a myotomic distribution. The pain is of the deep type, rises slowly to a crisis and slowly subsides. The muscles involved in the head and neck are the upper border of the trapezius, the splenius capitis, the upper third of the sternocleidomastoid, the styloglossus, the anterior belly of the digastric, the arytaenoideus posticus, the mylohyoid, the insertion of the styloglossus into the tongue (the remaining muscular mass of the tongue remaining free of tenderness) and the superior constrictors of the pharynx. These tender regions and referred pains are usually unilateral but may be bilateral. Myalgia may be associated with a vasodilating pain, endolymphatic hydrops or vasomotor rhinitis or two or more of these conditions. It has been suggested that these conditions are also on the basis of a physical allergy and together form the syndrome of physical allergy of the head. "Neuralgias" over points where branches of the cranial nerves perforate the skull are according to Peritz³⁰ often associated with myalgia of the head.

Patients who have myalgia are extremely sensitive to drafts, sudden changes of temperature and atmospheric changes. They often report precipitation of attacks by sitting in the breeze of an electric fan, by entering an air conditioned building or by the approach of cold, rainy weather.

In myalgia there is no increase in symptoms on disuse of the muscle and no relief of symptoms by mild exercise. The symptoms are not increased by fatigue or relieved by rest or food and there is no noticeable diurnal variation in symptoms. Salicylates, which give so much relief in "rheumatic" affections, produce little or no relief in myalgia.

Owing to myalgia being produced by spasmodic contraction of the arterial limb of the affected capillaries, vasodilators will relieve the condition by opening up and sweeping out the affected capillaries. Vasodilators which have been used with more or less success include neostigmine (prostigmine), magnesium sulfate, histamine and nicotinic acid. My personal preference is for nicotinic acid because it seems to have less variability in its effect on different persons than other vasodilators have. I find that for most persons dosage may be started with 25 mg. given hypodermically. Individuals have been encountered, however, in whom, because of untoward reactions such as abdominal pain, it has been found necessary to start with a dose as low as 1 mg. When an initial dose that may be tolerated has been found, it is necessary to increase the dose by a like amount either once or twice daily until the dose which will just relieve the symptoms is reached. It has been found that if this dosage is overstepped, symptoms will be precipitated. When the relieving or optimal dose has been established, the patient should continue taking it hypodermically once daily for from one to three months. At the end of this time an attempt should be made to change to oral medication, the patient taking twice daily by mouth the amount that has been taken once daily hypodermically. Some persons find themselves unable to maintain relief by oral medication.

If effective, the oral medication should be continued for a maximum of six months. If a rest period of from two or three weeks is not given after this length of time, the medication begins to lose its effectiveness. Many persons do not experience a return of symptoms for a year or more after discontinuance of medication. For those patients who experience an increase of symptoms during menstruation, Day³¹ has suggested the use of 0.1 mg. of diethyl stilbestrol by mouth. This may not prove effective the first month but will usually produce relief the second month. Occasionally giving 1 gm. of potassium nitrate in enteric-coated tablets with meals in combination with the nicotinic acid (niacin) will prove effective when niacin alone has failed. In my hands this treatment has proved effective in relieving 75 to 80 per cent of patients for whom a definite diagnosis of myalgia could be made.

Headaches Arising From Vascular Structures About the Head

The headache arising from vascular structures is always of the deep type and tends to be referred along the ramifications of the vascular tree. Lewis and associates³² have shown that when pain

is present in working muscles under ischemic conditions the vessels are collapsed during the pain. Ray and Wolff³ demonstrated that while overdistention of a vessel was pain-producing, constriction of the same vessel did not produce pain. Headaches in febrile conditions are produced by an increased cardiac activity without an increased arterial tension. This results in painful impulses against overstretched arterial walls. Headache is not produced by increasing spinal fluid pressure if tugging on pain-sensitive vascular structures is not produced. Thus lesions tending to produce slowly progressive increase in spinal fluid pressure, such as is encountered in intracranial hypertension (otitic hydrocephalus), are painless, while sudden changes in intracranial pressure, such as may be caused by intraventricular cysts and tumors, produce severe paroxysmal headaches by suddenly increased tension on vascular walls. These sudden headaches associated with change of posture, with equally sudden relief and with occasional vertigo, nausea and vomiting, are readily confused with vascular headache of the histaminic cephalalgia type but fortunately are even rarer. However, it goes almost without saying that a person who has severe headache should have an examination of the ocular fundi.

The headaches arising from the blood vessels in the head may therefore be divided into the vasodilating headaches observed with febrile disease, the vasodilating headaches in association with release of histamine into the vessel walls, the most spectacular of which is the histaminic cephalalgia described by Horton and co-authors,³³ migraine and headaches produced by tugging on intracranial vessels and the intermittent claudication type of pain, also described by Horton,³⁴ observed in temporal arteries.

1. *Migraine*: Migraine is a hereditary, periodic headache with complete freedom from pain in the interim, usually unilateral and starting before the second decade of life. There often is a preceding aura, usually associated with vasoconstrictive phenomena, which disappear with the onset of the phase of vasodilatation and are replaced by a pulsating headache which is associated with nausea and frequently with vomiting. The headache is associated with increased excursions of the temporal vessels on the side affected and pressure over these vessels or the carotid on the affected side will give temporary relief. The headache is not affected by the position of the patient but may be made worse by exercise. The headache is relieved by drugs which constrict the extracranial vessels such as ergotamine tartrate, but epinephrine, which is said to constrict the extra-

cranial vessels while dilating the cerebral vessels, will change the location of the pain while making it worse. The severe occipital migraines which are not relieved by ergotamine tartrate may be due to dilatation of the cerebral rather than the extracranial vessels.

Pfeiffer, Dreisbach and Roby³⁵ have offered the hypothesis that migraine is perhaps due to uncompensated fluctuations in the effective arterial blood volume. This hypothesis accounts for many of the vagaries of the migraine syndrome; namely, the onset at puberty and frequent relief at the menopause (correlating with the onset and waning of the cyclic activity of the sex hormones with their salt and water retaining properties); the increased incidence in the female over the male being due to the greater salt and water retaining power of estrogens over androgens; relief of migraine by pregnancy where a normal concomitant increase in the blood volume obtains.

In the hypothesis it must be assumed that an underlying familial defect exists which allows vascular spasm or dilatation with changes in the effective arterial blood volume.

2. *Histaminic cephalalgia*: Histamine cephalalgia is a periodic headache, usually unilateral, appearing in the third decade or beyond, which can be precipitated by alcohol or by the subcutaneous injection of histamine in dosage of 0.35 mg. (insufficient to produce a histaminic headache) after a latent period of fifteen to thirty minutes. There are no vasospastic phenomena or aura and usually no pulsation to the pain. The headache frequently appears at night, awakening the patient from sleep, and is of the highest intensity. It appears suddenly, is usually of relatively short duration, and disappears as suddenly as it came. The pain tends to be relieved by assuming the erect position and arterial compression gives temporary relief, the pain reappearing immediately on restoration of the blood flow.

Since the mechanism of histamine cephalalgia appears to be the same as that of myalgia, in other words, a localized capillary constriction and dilatation in the adventitia of the wall of the affected artery, flushing out the arterial loops with vasodilators, such as histamine and nicotinic acid, tends to relieve the symptoms. However, when given during the height of an attack in effective dosage vasodilators will increase the pain. Epinephrine given intravenously during the attack will relieve the pain.

Histaminic cephalalgia is associated with signs of autonomic overactivity of the homolateral side, such as congestion of the nasal mucosa, vasomotor rhinitis, vasodilatation of the skin, conjunctival

injection and lacrimation. It occasionally is associated with endolymphatic hydrops (Ménière's disease) and myalgia of the head as well as vasomotor rhinitis.

Conclusions

From the foregoing review of headache it can be seen that inflammation or pressure within the sinuses only rarely produces headache and that the so-called sinus headache can nearly always be ascribed to some other cause, sinusitis being as a rule a painless disorder.

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BOECK'S SARCOID

Clinical Review and Case Presentations Lewis J. Dimsdale, M.D., Sioux City

The possibility of sarcoidosis must be considered in the differential diagnosis of all chronic granulomas. It was thought to be only a dermatological problem when first described by Hutchinson in 1875, but experienced observation soon disproved this opinion. Besner in 1889, reported a patient with granulomatous swellings of the ear, nose and fingers. Gradually, other and more widespread involvements were observed. Ten years later, Boeck, after studying the microscopic characteristics of the above cases, concluded that all were manifestations of the same disease. He called it sarcoid because the cells resembled small cells of sarcoma. Subsequent literature described involvement of almost all tissues and organs in the body.

The disease does not favor either sex or color. Although isolated reports point to a particular group incidence, especially to the colored race, by far and large a cross section of literature refutes this idea.

Age likewise does not limit its suspected presence. Although predominantly a disease of young adults, it has been reported in an infant three weeks old and in an adult seventy years of age.

We are considering, therefore, not a medical curiosity, but a disease of interest to all branches of medicine. The clinical expression varies widely and depends upon the organ involved.

The literature provides no clue about the early stages of this illness. The widespread manifestations present when it is first seen, suggests, however, that it runs a subclinical course for some time.

The most common initial finding is enlargement of the lymph nodes. The adenopathy may be limited or generalized. The nodes are firm, rubbery, discrete, movable, and usually are not tender. Hilar involvement is often of such extent as to

simulate a lymphoblastoma or other neoplastic disease of the mediastinal lymph nodes and lung.

Any of the structures of the eye may be affected and may be mistaken for syphilis or tuberculosis. In some cases, the parotid gland may be simultaneously diseased and give rise to the so-called syndrome of uveoparotid fever. Likewise the coincidental involvement of the lacrimal or salivary glands suggests a Mikulicz's syndrome.

In the skin, localized nodules are seen. Painless, nonpruritic violaceous plaques with no surrounding erythema or induration may occur. A combination of both types of lesions is not uncommon.

In the central nervous system, a definite tendency for basilar localization is the rule. I have seen two of such cases. Both had generalized lymphatic and pulmonary sarcoidosis. One developed symptoms of diabetes insipidus; the other developed an intracranial hemorrhage and hemiplegia. Krause reported a case with pituitary gland involvement.

Bone lesions are seen in approximately 10 per cent of the cases. The small bones of the hands and feet are most frequently involved. A painless, rubbery spindle-shaped swelling about the interphalangeal joints is noted. Early x-rays show only a rarification of these bones. At a later time, circumscribed cysts appear as punched out areas. The periosteum remains intact and the joints are rarely involved.

Involvement of the small intestine has been observed in widespread sarcoidosis. This has led to conjecture as to the possible relationship to regional enteritis or cicatrizing enterocolitis.

Any or all parts of the heart may be involved. This may be by actual infiltration. In some, the damage has been considered secondary to pulmonary fibrosis with right sided strain and failure. Longcope, Fisher and Murphy reported six such cases with myocardial and pericardial disease.

Pulmonary lesions are very common and are second only in importance to lymphatic disease. Chest films may show many different pictures. The more frequently seen include enlargement of the mediastinal and hilar nodes, small nodular areas of parenchymal infiltration, diffuse infiltrations, or a reticulated appearance similar to that found in miliary tuberculosis. Soft infiltrations resembling cavity formation and pleural effusions have also been described. Although extensive pulmonary involvement is seen, one is impressed with the absence or paucity of physical findings. It is noteworthy also that, irrespective of the suggested seriousness as indicated by x-ray, the

latter is not a measure of the gravity of the disease. Extensive pulmonary changes may clear without ever giving rise to respiratory symptoms. A correct diagnosis may therefore dramatically alter a given prognosis.

I recall one such case that I followed about ten years ago. He was a clinical case and very uncooperative. X-rays revealed what appeared to be extensive exudative lesions in both lungs. A diagnosis of tuberculosis was made and a strict regime of management advised. Before bacteriologic confirmation could be obtained, this man moved out west. We heard that he was working on a ranch and naturally never expected to see him alive again. He returned a year later— hale and hearty. X-rays then showed complete resolution with no residual findings. I feel that many such cases, formerly diagnosed as acid fast infections and given grave prognosis and who subsequently made remarkable recoveries either without care or under the supervision of charlatans, undoubtedly fall into this group of unrecognized sarcoidosis.

King at Massachusetts General Hospital, in reporting on 112 cases with a follow-up on 37, reported that in 23, the chest lesions completely cleared in seven weeks to three years—the average being twenty-two months. The pulmonary lesions are thought to resolve with residual fibrosis. In some cases, however, no pulmonary fibrosis could be demonstrated at autopsy examination. Some therefore feel that the reticulated appearance, so frequently seen, represents not fibrosis but a hyperplastic lymphangitis.

We know that the direction of lymphatic drainage is from the periphery to the hilum. It is conceivable that the hilar glands may be so damaged that effective drainage is not possible. The granular foci of slight density may therefore represent blocked lymphatics.

These are only the more usual sites of sarcoid disease. It is well to remember that any and all may occur in different combinations and give rise to bizarre entities.

In view of the widespread nature of the disease, it is surprising that constitutional symptoms are not more frequently seen. There may be no fever, loss of weight or localized discomfort. Arthralgia, general malaise and weakness are at times encountered.

The disease pursues a chronic and relapsing but relatively benign course. The duration is variable and difficult to determine. In various reviews, courses ranged from six weeks to twenty-two years.

The exact nature of this disease is still in dispute. Many confusing clinical and pathologic features are noted. The pathology is that of a disseminated granuloma. No matter where localized, it produces an identical type of lesion. One sees infiltrations consisting of tiny nodules of epithelioid cells, giant cells and round cells similar to those seen in tuberculosis. They differ, however, in that they are less likely to caseate or coalesce and are prone to become surrounded by a hyaline fibrous capsule. Calcification is unusual. The cellular reactions suggest some form of myobacterial disease.

There have been numerous discussions and experiments to show its relationship to tuberculosis. Some writers maintain that sarcoid is simply a noncaseating tuberculosis. They cite the entities observed after injecting tubercle bacilli into a special host like the rat. The absence of caseation is explained as due to special resistance on the part of the host. Further support for this theory has been presented by Florence Sabin. By injecting only the lipid fraction of tubercle bacilli into laboratory animals, she obtained hard epithelioid cell tubercles typical of sarcoid. Transposing these observations into clinical medicine, it is theorized that if the bacilli are attenuated or the resistance of the host is high, the body is capable of denaturing the tubercle bacilli so that only the lipid fraction remains. We then have produced the histologic picture of sarcoidosis. If this reactivity changes and the host becomes unable to denature the tubercle bacilli, then the latter act in the usual way and progressive caseation ensues. This likewise dovetails with frequent clinical observation. Caseation has been observed in sarcoidosis; absence of caseation has been seen in tuberculosis. The presence or absence of caseation per se is therefore not of definitive value. Formerly, many silver stains for reticulum structure were utilized. The degree of demonstrable reticulum destruction depended entirely upon the presence and extent of caseation. As long as absence of caseation was considered pathognomonic of Sarcoidosis, such stains were helpful. As increased clinical experience disproved such an observation, biopsy material became less pathognomonic.

A further suggestive relationship to tuberculosis is that patients with sarcoid, when they go rapidly downhill, frequently have their exodus with frank tuberculosis.

In spite of the many clinical, radiologic and histologic resemblances, there is much to argue against a tuberculous etiology. The all important

Koch's postulates cannot be met. Tubercle bacilli are not demonstrable in sarcoid lesions. Injection of ground-up sarcoid tissue into susceptible hosts will not produce tuberculous lesions. Cultures are likewise invariably negative. The usual finding of a negative Mantoux test also bespeaks against a tuberculous etiology. Caseation and tuberculosis infection may, therefore, be a natural development of sarcoidosis, or on the other hand may only represent a secondary infection with acid fast bacilli in an enfeebled patient. In other words, the relationship may be no more than the coincidental finding of tuberculosis in sarcoidosis similar to that seen in other chronic diseases—Hodgkin's for instance.

Many other etiologic agents have been suggested. The entire sarcoid syndrome may be found in leprosy. This has led to speculation about a possible relationship. A specific virus such as observed in lymphogranuloma inguinale is suggested by both the clinical manifestations and blood picture. Allergy, too, has been given consideration because of the frequently observed eosinophilia. The etiology is still highly controversial.

The diagnosis is no less difficult. Whereas in former years, pathologists would dogmatically commit themselves, this is no longer true. Biopsy studies are, at best, only suggestive. A number of other laboratory procedures have been considered helpful. Blood findings reveal an increase in eosinophils, a tendency to leukopenia and neutropenia, and an elevated serum protein with a definite increase in the globulin factor. This altered A/G ratio is considered by some as an index of activity as well as a differential diagnostic point. Hyperglobinemia is found however in a wide variety of other disorders. It was reported by Bing in various chronic bacterial infections including some cases of tuberculosis. Again this determination is only suggestive.

The sedimentation index is usually elevated. Since hyperglobinemia is usually present, and since the latter, per se, increases the rate, the sedimentation index alone cannot be relied upon in either diagnosis or prognosis.

The Mantoux is usually negative in sarcoidosis. A similar degree of involvement caused by tuberculosis is almost always accompanied by a positive tuberculin test. Here again one must exert caution. Sarcoid cases will occasionally have a positive Mantoux test—perhaps from a pre-existing primary infection. Tuberculosis on the other hand, in the presence of an overwhelming infection, not infrequently shows negative sensitivity tests.

We have, therefore, no definite criteria upon which to base a diagnosis. The latter is entirely a clinical impression. The pathologist and laboratory can give supportive evidence but the final evaluation depends upon the intelligent integration of all findings including the course of the disease.

Little can be said about the treatment of this disease. Almost every type of physical and chemical agent has been tried. Suffice it to say that no known therapeutic approach has been found effective. The management is still entirely supportive and symptomatic. Apparently the disease is not highly communicable and presents no public health problem.

In conclusion, I wish to emphasize the relative frequency of sarcoidosis and its numerous and protean manifestations. The diagnosis depends upon the sum total of many clinical and laboratory observations. Its apparent infrequency is the result of a low threshold of suspicion by many doctors which results in missed diagnosis.

The following are several cases demonstrating some of the features described:

Case No. 1

H. C., colored, age 36, had no known family history or contact with tuberculosis. Five years prior to admission, he worked as a screener in an asphalt factory for ten months, and thereafter he was employed as a laborer but was not unduly exposed to dust.

During a routine chest survey, x-rays showed flaky opacities in both lung fields. (See fig. 1.) Physical examination revealed no apparent significant findings. He was referred for evaluation for pneumoconiosis. Further examination disclosed generalized, discrete, shotty lymph glands. The roentgenograms on review, showed complete parenchymal involvement, including the apices and bases. Such a distribution is unusual in silicosis. The adenopathy in the presence of the above suggested the possibility of sarcoidosis.

Laboratory procedures confirmed this suspicion. The Mantoux test was negative in all dilutions; sedimentation index was accelerated (18 mm. by Cutler method); total serum protein was 7.5, and the A/G ratio was 1. Sputa examinations for acid fast bacilli were negative.

He was afebrile and asymptomatic. There was no history of involvement of the skin, eyes or bones. He did, however, state that shortly before his admission he had experienced a peculiar attack of "painless mumps" which had lasted two months.

A gland biopsy from the inguinal region was

not abnormal. A node removed from the posterior cervical chain showed definite non-caseating tubercle formation. This confirmed the diagnosis.

The case is of interest in demonstrating a common type of extensive pulmonary involvement associated with all the classical laboratory findings in a patient without symptoms. It likewise shows that one normal microscopic section does not disprove the diagnosis. Several glands may have to be examined. The advisability of inquiries about history of "mumps" is suggested. In early stages of the disease, the condition may masquerade as "mumps."

Case No. 2

R. B., colored, age 29, had had an uncle who died of tuberculosis. There was no other significant family history. His previous health had been good.

On April 1, 1942, he noted onset of productive cough, "chest heaviness," loss of weight and strength, and anorexia. Several weeks later, bilateral parotid swelling occurred. He complained of a scratching sensation in his right eye. He continued to work however, until May 28, 1943. Hospitalization was then accomplished because of "persistent mumps" and visual disturbances.

On examination, all the salivary and the lacrimal glands were enlarged and firm but not particularly tender. The right cornea showed K.P. bodies. Occasional coarse crepitant râles were audible over the entire chest. He was afebrile but continued to complain of cough and tiredness.

Chest x-rays showed a marked enlargement of the hilar lymph glands bilaterally and sparsely scattered, hazy, peribronchial infiltrations in both lung fields. Progress films showed a slight increase in the size of the peritracheal and peribronchial lymph nodes (fig. 2). Films of the feet showed a punched out area in the fifth right toe. Blood count and differential were normal (fig. 3); sedimentation index was markedly elevated; the total serum protein was 8.6, (albumen 3.7, globulin 4.9, A/G ratio 1/1.32. Sputa examinations both by direct smear and by culture were repeatedly negative. The Mantoux test was negative.

A gland biopsy showed caseating tubercle formation, but acid fast bacilli were not demonstrable. Guinea pig inoculation was negative. Because of caseation and reticulum destruction as shown by special silver stains, the pathologist reported the slide as showing tuberculosis. Upon conferring with him and outlining the other findings, he concurred that a diagnosis of sarcoidosis was warranted. The subsequent clinical course with

marked improvement confirmed this impression.

This demonstrates that the pathologist, like the laboratory, cannot offer a final diagnosis. His report must be coordinated with the entire picture. The presence of caseation here did not rule out sarcoidosis nor should it establish the diagnosis of tuberculosis. In suspected cases, x-rays of the hands and feet for possible small bone involvement may add helpful information to support a diagnosis of sarcoidosis.

Case No. 3

In September, 1943, while in military service, J. A., colored, age 23, complained of arthralgia, tiredness, weakness, headache, visual disturbances, loss of weight, general malaise, and recurrent skin nodules. Hospitalization was accomplished on three different occasions. A low grade fever was observed. Agglutination tests for typhoid, paratyphoid, Brucellosis, infectious mononucleosis, as well as studies for malaria, lymphogranuloma inguinal, septicemia, and rheumatic fever were negative. Sputa studies were unrevealing. He was repeatedly returned to duty, but because of persistence of multiple complaints and frequent visits on sick call he was evacuated to the United States with a diagnosis of psychoneurosis.

En route back he developed a harsh cough. Multiple areas of diminished resonance and impaired breath sounds but no râles were present on auscultation. Chest x-rays showed extensive pulmonary infiltration (fig. 4). Physical examination further disclosed diffuse small subcutaneous nodes and a bilateral iridocyclitis. Definite generalized adenopathy was also observed. The Mantoux test was weakly positive with 1-100 tuberculin. Total protein and A/G ratio, and sedimentation index were suggestive of sarcoidosis. Lymph gland biopsy showed mostly reticulum cell hyperplasia and was reported as erythema induratum. This likewise was compatible with a diagnosis of Boeck's sarcoid.

This illustrates the systemic nature and widespread involvement seen in this disease. It indicates the necessity of its consideration in the bizarre low grade fever cases. Unmistakable symptoms and signs may not present themselves until the disease is well advanced.

Summary

Ten patients with Boeck's Sarcoid have been observed during the past three years. Only one had a correct referral diagnosis. They were given many names—tuberculosis, Hodgkin's disease, pneumoconiosis, erythema nodosum as well as psychoneurosis. All presented characteristic or

suggestive findings and could have been diagnosed had the possibility of sarcoidosis been considered.

Helpful diagnostic procedures and their limitations have been reviewed.

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MYOCARDIAL INFARCTION AND/OR FATAL CORONARY DISEASE IN YOUNG SOLDIERS

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Atherosclerotic coronary disease is ordinarily thought of as a disease of later life. Even though it has been shown that the atherosclerotic process may begin early in life⁷ and that coronary disease can affect the younger age group^{5,9}, in civilian life it is rare for the average physician to see the serious consequences of coronary sclerosis in individuals below middle age. In the military service, however, the population is predominantly a youthful one; given sufficient time and a sufficient number of personnel, a disproportionately large number of cases will be found. This has been our experience, and between January 1, 1941 and May 1, 1944, we saw sixteen instances of myocardial infarction and/or fatal disease in individuals below the age of 36. The purpose of this report is two-fold: (1) to record the clinical and pathologic findings in these cases for comparison or contrast with those in the older age groups; and (2) to emphasize that serious coronary disease may occur in young adults.

Material

Our material stems from two sources. First, we obtained from the office of the registrar, Station Hospital, Fort Benning, Ga., the clinical

records on all cases listed within the prescribed period under the headings: "Myocardial infarction," "coronary occlusion," or "coronary thrombosis." Secondly, we obtained from the pathologic laboratory at the same station the protocols on all autopsied cases within the same period listed under: "coronary sclerosis," "coronary occlusion," "coronary thrombosis," and/or "myocardial infarction," when such was considered the principal cause of death. Having chosen the age of 35 as a dividing line, above which coronary disease is hardly considered a rarity, we assembled all the cases up to and including the age of thirty-five. Sixteen cases were found and form the basis for this report. Any attempt at a statistical analysis of frequency is impossible for the following reasons: (1) the strength of the command is guarded military information; (2) even if the total strength were available, the age distribution is not known, and we would be unable to estimate what percentage of any age group our cases represent; and (3) some of the cases obtained from the pathologic laboratory were sent here from other stations for post-mortem examination and could not properly be used if we were attempting to compute the frequency of the condition among men stationed at this post.

Findings

Between January 1, 1941 and May 1, 1944 we found 16 instances of myocardial infarction and/or fatal coronary disease in individuals between the ages of 23 and 35, inclusive. Four of these, in whom a diagnosis of myocardial infarction was made on clinical grounds, recovered and anatomical confirmation was not obtained; upon recovery all were discharged from the military service by reason of physical disability. The remaining twelve died; all of these were examined post-mortem.

Age: The age incidence is shown in Table I. Seven cases were in the age group 23 to 29, and 9 in the group 30 to 35.

Sex: All were males. The number of the WAC's, nurses, etc., at this post is relatively small, and we saw no instances of serious coronary disease among them.

Race: Fourteen were white; 2 were negroes.

Circumstances Under Which Attack Occurred: One patient had no clinical episode recognizable as coronary occlusion or myocardial infarction. The diagnosis in this case (Case 1) was made from the electrocardiographic features; it is realized that this might be questioned in view of the absence of anatomical confirmation, but the tracings are considered to be sufficiently characteristic

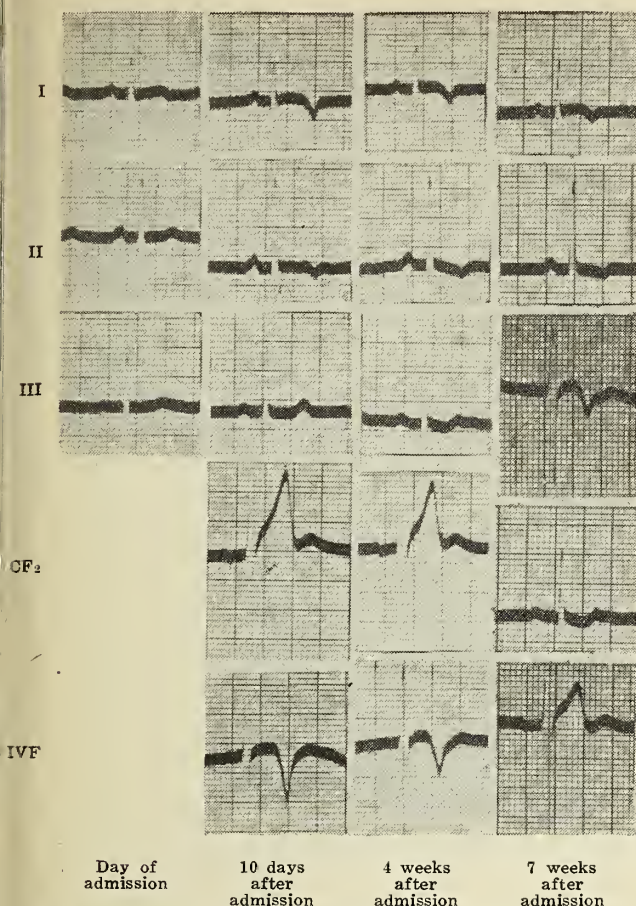


Fig. 1 (case 1)—The serial changes in these tracings are interpreted as indicating the presence of an anterior wall myocardial infarction.

(fig. 1) in this instance to warrant the diagnosis. In thirteen other cases the attack occurred during the performance of what might be called ordinary activities. In only two of these thirteen was extraordinary activity suggested; one (case 10) felt unduly fatigued after the morning calisthenics, but this patient had a sudden onset of substernal pain two hours after cessation of the exercise; the second (case 13) dropped dead half an hour after a half-mile run. In 2 patients out of the total 16, the clinical symptoms of the acute attack manifested themselves during the performance of unusual physical exertion; one (case 2) was playing football shortly after his noon meal, and the second (case 16) was negotiating the obstacle course shortly after breakfast. The circumstances involved in one other case are worthy of special mention. This soldier (case 12) had fallen out of a double-decked bed, sustaining a small scalp laceration but no other evidence of injury. Approximately one hour later he first started to notice epigastric and substernal pain associated with vomiting; he died five days later. At autopsy

thrombosis of an atheromatous segment of a coronary artery was found with a resultant myocardial infarction. Although a temporal relation exists, a causal relationship between the trauma and the myocardial infarction is open to question. In table II are listed the circumstances in each of the sixteen cases.

Electrocardiographic Features: Electrocardiograms are available in seven of the cases. Five of these showed a pattern characteristic of infarction involving the anterior apical region of the left ventricle; the other two showed the pattern of posterior basilar infarction. Of these 7 patients, 3 died and were examined at autopsy; in all 3 both the presence of infarction and the localization were confirmed. In 1 patient there was no history of a clinically recognizable attack of myocardial infarction, as noted above, and the diagnosis rests on the electrocardiograms; some elaboration is, therefore, considered justified. This was a young Negro male (case 1) with a history of recurrent rheumatic fever of ten years duration, who entered the hospital in congestive heart failure which had begun to manifest itself some two weeks earlier; there was a definite aortic insufficiency of moderate degree and a questionable mitral lesion; no evidence could be found of syphilis. On bed rest and digitalis all signs of congestive failure cleared rapidly and without event, and he was discharged completely asymptomatic eleven weeks later. The first electrocardiogram (fig. 1), made on the day of admission prior to the administration of any medication consisted, unfortunately, of only the three standard limb leads; even so, however, in lead 1 is seen a contour of the ST-T segment which is difficult to describe, but is fairly characteristic of the early T_1 coronary pattern. The next record, ten days later, shows a contour which we considered sufficiently characteristic to indicate the presence of infarction involving the anterior wall of the left ventricle.

The only other possibility to which we gave serious thought was that the changes might have been due to the administration of digitalis. We ruled against this possibility on the strength of three considerations: (1) characteristic changes were seen in the first record before digitalis was started; (2) the contour is not characteristic of that produced by digitalis; and (3) changes in serial tracings were consistent with those seen following acute myocardial infarction, although digitalis continued to be administered in exactly the same form and dosage. It is our opinion that the most likely cause of the infarction in this case is an occlusion of the left anterior descending coronary

artery caused by rheumatic inflammation of the vessel. In the absence of anatomical examination, however, such a surmise remains unproven. In one patient (case 6) the electrocardiogram (fig. 7) made seventeen days after the attack showed a degree of deviation of the RS-T segment which was felt to be excessive at that stage; it was

suggested that the onset of symptoms may have heralded the occurrence of a coronary occlusion, with actual infarction delayed until shortly before the record was made. This patient died two days after the tracing was made and post-mortem examination revealed a large anterior wall infarct of an age indicating that the pathologic process was of the same duration as the symptoms; the involved portion of the heart wall had already developed a definite aneurysmal dilatation. Wilson¹⁰ recently noted that RS-T segment deviation has been seen to persist in a few cases in which ventricular aneurysms developed following myocardial infarction.

Pathologic Features. Twelve patients died and all were examined post-mortem. The significant cardiac findings in each case are listed in Table III. In eight of the twelve cases atherosclerotic changes were found diffusely throughout the coronary tree. In four, however, the pathology was confined to one major branch; three times this was the left anterior descending coronary artery and once the right coronary artery. Complete occlusion of a major coronary vessel was found in

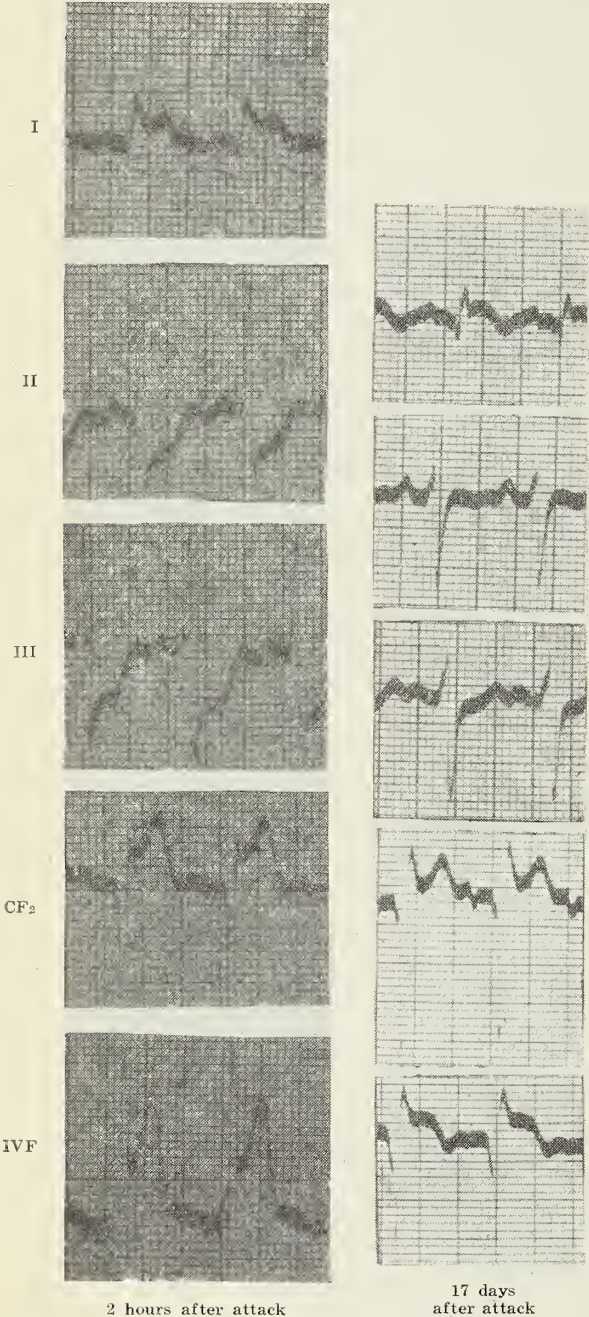


TABLE I

	Age	White	Colored	Total	Died	Recovered
II	23		1	1		1
	24	2		2	2	
	25	1		1	1	
	26	1		1	1	
III	27					
	28	1		1	1	
	29		1	1		1
	30					
CF ₂	31					
	32					
	33	3		3	2	1
	34	3		3	3	
IVF	35	3		3	2	1
	Total	14	2	16	12	4

Fig. 2 (case 2)—This record is typical of an acute anterior wall myocardial infarction.

Fig. 3 (case 6)—This record is typical of an acute anterior wall myocardial infarction. The persistence of the RS-T segment deviations for this length of time was explained at autopsy by the presence of a ventricular aneurysm.

only three cases, and was in each instance found to be the only occlusion present; in the other nine, no complete obstruction was found. Infarction of the myocardium was found in four cases; these patients died from four hours to five weeks after the clinical attack. No infarction was found in eight, all of whom died suddenly or within three-fourths of an hour. In one of the hearts with infarction, no coronary occlusion could be found. In this case the only involvement present was an atheromatous plaque in the left anterior descending branch near its origin reduc-

ing its lumen to a mere slit (fig. 3); this patient developed his clinical attack during unusual exertion, while playing football immediately following the noon meal. Apparently the blood flow through this narrowed vessel was impaired sufficiently to produce irreversible tissue changes under the stress of excess demand which could not be met. Seven of the soldiers dropped dead with little or no premonitory symptomatology, and an eighth died within three-fourths of an hour of the onset of severe precordial pain. All of these showed extensive coronary sclerosis, only one being confined to a single vessel. None showed complete occlusion of a major coronary artery, and none showed myocardial infarction. Their deaths must be considered "physiologic" in that myocardial ischemia due to an acute coronary insufficiency set up an irreversible rhythm, either ventricular fibrillation or cardiac standstill, resulting in death.

Case Reports

Case 1. This 23 year old Negro soldier entered the Station Hospital with congestive heart failure, which had its onset two weeks prior to admission and ten days following an acute tonsillitis. He had had acute rheumatic fever ten years earlier, with recurrences in the interval. Physical examination revealed a moderate degree of aortic insufficiency and questionable mitral disease. The blood pressure was 134/40. He showed cardiac enlargement, pulmonary congestion, right hydrothorax, ascites, and dependent edema. The erythrocyte sedimentation rate was rapid. The electrocardiogram (fig. 1) showed a low T wave in lead I with upward bowing of the RS-T segment. The patient was kept at bed rest and was digitalized. The congestive phenomena cleared rapidly and without event. The sedimentation rate gradually dropped to normal, and the cardiac shadow decreased in size though remaining somewhat enlarged. Serial electrocardiograms showed the development of inverted "coronary" T waves in leads I, II, and IVF, followed by waning. At one time a "digitalis" contour of the T waves appeared in leads II and III; on a constant dose of digitalis, this contour tended to persist, as contrasted with the "coronary" T wave changes in leads I and IVF, which first waxed and then waned. From the series of electrocardiograms, a diagnosis of myocardial infarction involving the anterior wall of the left ventricle was made. Eleven weeks after admission to the hospital this soldier was discharged from the service; he was asymptomatic at the time.

Case 2. This 24 year old white soldier entered the Station Hospital complaining of severe sub-

sternal pain which had started two hours earlier while he was playing football shortly after the noon meal. He had occasionally had similar pain of lesser intensity for over two years, also occurring on exertion, and lasting about fifteen minutes; he had never previously sought medical attention for this complaint. Examination revealed only apprehension and discomfort. Cardiac findings were normal. Blood pressure was 120/90. The electrocardiogram (fig. 2) showed the pattern of acute anterior wall infarction in the early "RS-T stage." The patient died suddenly two hours after admission to the hospital. Post-mortem examination revealed the presence of an atheromatous plaque in the left anterior descending coronary artery 3 cm. beyond its origin, extending for 1.5 cm., and reducing the lumen to a mere slit (fig. 5); no complete occlusion was found. There was softening of the left ventricle just to the left of the left anterior descending artery, also an area close to the marginal branch of the right coronary artery. Microscopic sections showed moderate to advanced degenerative changes of recent origin with little or no inflammatory change.

Case 3. This 24 year old white soldier dropped dead while walking to the chapel in the capacity of guard to a prisoner. He had not sought medical attention previously, but a friend offered the information that this soldier had occasionally mentioned to him during the previous five months of the occurrence of "pain in the heart"; at no time did this complaint interfere with the soldier's performance of his duties. Post-mortem examination revealed that the right coronary artery was quite narrow, having a double origin from the aorta. Both coronary vessels were involved by a patchy atheromatous process which greatly thickened their walls and narrowed their lumina at places; no occlusion was found. No infarction of the myocardium was found. There was also a bicuspid aortic valve.

Case 4. This 25 year old white soldier was brought to the Station Hospital one-half hour after the onset of severe precordial pain which radiated down the left arm. The pain had started at 9 p. m., while the soldier was at rest in the guardhouse where he was a prisoner. He died in the receiving office ten minutes after he was first seen. Post-mortem examination revealed a diffuse sclerotic process in the left coronary artery from 0.5 cm. beyond the ostium to just beyond the bifurcation of the left anterior descending branch, and extensive atheromatous changes in the right coronary artery. No occlusion was found. On gross examination it was

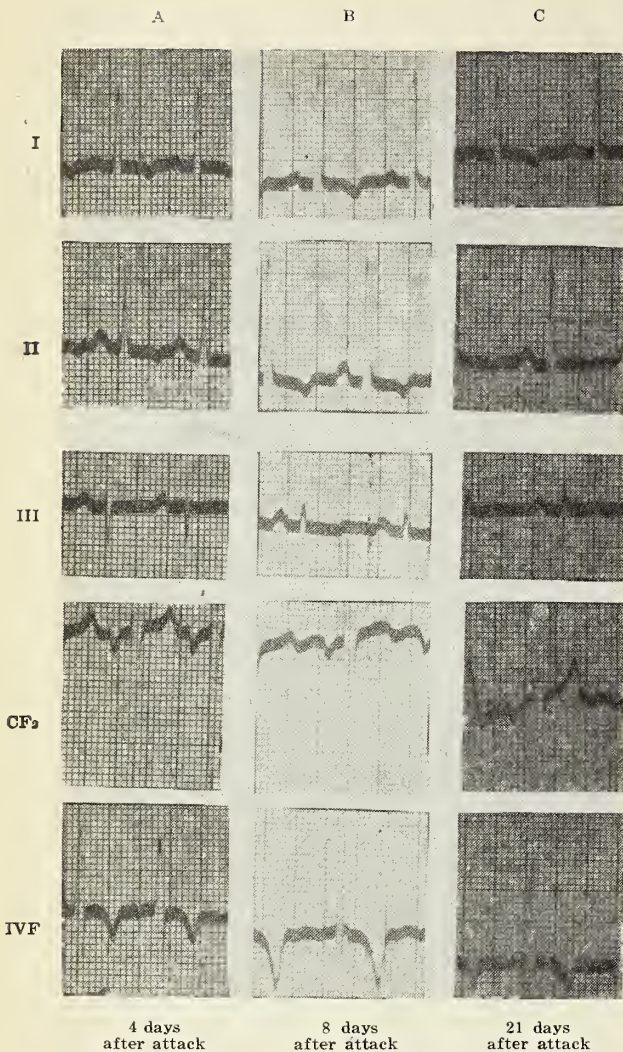


Fig. 4 (case 7)—The first record was thought to resemble the pattern of left ventricular strain. The serial changes in the next two tracings, however, indicated that myocardial infarction had occurred.

noted that "there were several suggestive areas of softening just to the left of the interventricular septum." On microscopic examination of these areas, however, it was noted that "the myocardium shows surprisingly few changes."

Case 5. This 27 year old white soldier entered the Station Hospital complaining of the sudden onset of pain across the lower chest with radiation in both arms while walking in his company area shortly after breakfast. This attack of pain was associated with vomiting, diarrhea, dizziness, pallor, cold sweat, and generalized pains in all his joints. On admission to the hospital his blood pressure was 128/86; his pulse rate was 100, with some irregularity due to premature systoles. Heart sounds were described as somewhat distant; no murmurs were heard. White blood cell count

and erythrocyte sedimentation rate were normal. An electrocardiogram taken two days after admission showed a depressed RS-T junction and a tall upright T wave in lead I with inverted "coronary" T waves in leads II and III. Serial electrocardiograms showed small changes which were considered sufficient to warrant the diagnosis of recent infarction involving the posterior wall of the left ventricle. Throughout the period of hospitalization his condition was good, both subjectively and objectively. On the thirty-first hospital day, following the midday meal the patient experienced a severe precordial pain which radiated down both arms and was associated with a moderate degree of shock. Two hours later the patient's condition was described as good and the electrocardiogram showed little change from previous records. He remained comfortable until 10 p. m. when the nurse discovered the patient gasping for breath, cyanotic, cold, and almost pulseless. Five minutes later he was pronounced dead. Post-mortem examination revealed both healing and fresh myocardial infarction, involving the posterior portion of the interventricular septum and adjacent right ventricular and left ventricular walls. The left circumflex and left anterior descending vessels were patent throughout with thin pliable walls, free from atheromatous changes. The right coronary artery showed atheromatous change and thrombosis localized to a 20 mm. segment beginning 2 cm. from its origin (fig. 6).

Case 6. This 28 year old white soldier gave a history of having experienced sudden pain in the precordial region fifteen days before admission while riding on a train. The original pain persisted for four days and was accompanied by episodes of vomiting. Thereafter he continued to have recurrent attacks of precordial pain of lesser intensity, radiating to the neck and both arms, more marked on the left. There had also been some dyspnea and orthopnea. On admission the soldier did not appear to be seriously ill. Physical examination revealed an enlarged heart. Heart sounds were normal and no murmurs were heard. Blood pressure was 100/70, pulse rate 112. No congestive phenomena were found. An electrocardiogram (fig. 3) revealed a pattern considered pathognomonic of a recent anterior wall infarction. This patient responded poorly to treatment. On the fourth day of his hospitalization his pain became more severe and constant, and he began to show manifestations of shock. He was placed in an oxygen tent and given pantopon with atropine for analgesia. Two days later the patient died suddenly. Autopsy revealed massive infarction

tion of the left ventricle with special involvement of the anterior wall. Other changes included pericardial adhesions, aneurysmal dilatation, the presence of a mural thrombus, and gelatinous thrombus within the atheromatous left anterior descending coronary artery located 1 cm. from its ostium. The other coronary vessels were normal.

Case 7. This 29 year old colored soldier entered the Station Hospital five days after his induction into the Army, complaining of severe abdominal pain. For the previous six months he had been having epigastric pain on heavy exertion and after heavy meals, with a tendency to relief by rest and by the ingestion of Bisodol. Two days prior to admission to the hospital he developed a severe attack of pain high in the epigastrium. This occurred in the afternoon while walking. The pain continued in gradually increasing intensity until he was admitted to the hospital forty-four hours later in extreme discomfort and showing great anxiety. The entire upper abdomen was very tender and rigid. The heart was slightly enlarged; its rate was 120 and the rhythm was basically regular with an occasional premature systole. Gallop rhythm was present at the apex, but no murmurs were heard. The blood pressure was 150/120. A diagnosis of perforated peptic ulcer was made and immediate laparotomy performed. No significant intra-abdominal pathology was found. An electrocardiogram made two days later (fig. 4) showed a pattern which was thought to be more suggestive of left ventricular strain⁶ than of myocardial infarction. Serial tracings, however, showed changes which, in conjunction with the clinical picture, indicated that myocardial infarction had occurred. The soldier made an uneventful recovery and was discharged for physical disability.

Case 8. This 33 year old German prisoner of war was apparently in good health until the date of his death. Shortly after breakfast he began to complain to his comrades of feeling sick and particularly of pain over the precordial area. His comrades noted that he was short of breath. He was advised to report to the infirmary and apparently started to do so. A short time later his body was found lying on the ground near the infirmary. Post-mortem examination revealed a considerable sclerotic process involving the left anterior descending coronary artery near its origin, but without complete occlusion. The other vessels were not involved and no infarction was present.

Case 9. This 33 year old soldier complained of severe epigastric pain following the evening meal and he died several minutes later. No history of

previous complaints referable to the cardiovascular system were obtained from his medical record or his associates. Post-mortem examination revealed the coronary vessels to be extensively narrowed in places by atherosclerosis. The proximal portion of the anterior descending branch of the left coronary had a lumen of pin-point caliber. The right coronary was also markedly and irregularly narrowed but to a lesser degree. No occlusion was found, and no infarction was present.

Case 10. This 33 year old soldier entered the hospital with sudden onset of chest pain which came on two hours after he finished his usual morning calisthenics. He described the pain as radiating down both arms, especially the left. There was associated numbness of both hands and legs and some vomiting. Past history was non-informative, there having been no previous evidence of heart disease. Examination revealed a patient in moderate pain but not in shock. His blood pressure was 160/108; the heart was not

TABLE II
CIRCUMSTANCES UNDER WHICH ATTACK OCCURRED

Case	
1	No recognizable clinical attack.
2	While playing football, shortly after meal; died four hours later.
3	While walking, suddenly dropped dead.
4	At rest in guardhouse; died 40 minutes later.
5	"While at work"; died in hospital 31 days later, ten hours after recurrent attack.
6	On a troop train; died in hospital 19 days later.
7	While walking.
8	Dropped dead after breakfast.
9	Dropped dead following the evening meal.
10	At regular duties, two hours after calisthenics.
11	Died suddenly in train.
12	In bed (one hour after falling out of bed).
13	Died suddenly while taking a drink of water, one-half hour after a half-mile run.
14	Died suddenly in stockade, after 4 days of vague chest pain.
15	Died suddenly in quarters after meal.
16	While going over obstacle course.

enlarged; no murmurs or thrills were elicited. The heart rate was 60 with occasional premature systoles. There was leukocytosis and elevated sedimentation rate the first few days of hospitalization; both subsided later. X-ray of the chest was negative. A series of electrocardiograms indicated the presence of acute myocardial infarction involving the anterior wall of the left ventricle. This patient had an uneventful course, and after two months of hospitalization he was discharged from the army for physical disability.

Case 11. This 34 year old white soldier died suddenly while aboard a train. No other history was available. Post-mortem examination revealed a moderate degree of atheromatous change throughout the entire coronary tree. Microscopically there was extensive atheromatous change with marked narrowing of the lumen to approximately one-third its normal size, but no occlusion was noted. No infarction was present.

Case 12. This 34 year old white soldier entered the hospital complaining of "gas pains" in the epigastrium and around the heart of four hours duration. Five hours earlier he had been seen at the infirmary because of a scalp laceration, incurred when he fell out of a double-decked bed. This appeared to be minor; one suture was placed and he was returned to his barracks. One hour later the "gas pains" started. When he entered the hospital, the patient was described as pulseless, ashen in color, retching, orientated but somewhat anxious, covered with cold perspiration, and obviously in shock. Other significant findings included a blood pressure of 90/78 and faint heart sounds. His condition remained critical and he gradually developed congestive heart failure. The patient died on the fifth hospital day. Post-mortem examination revealed infarction involving the anterior one-half of the interventricular septum and the anterior two-thirds of the left ventricle. The anterior descending ramus of the left coronary artery was completely occluded by a thrombus from its origin for a distance of 4 cm. There was also moderate eccentric atheromatous thickening of the remainder of the coronary system.

Case 13. This 34 year old white soldier ran one-half mile at 8:30 a. m. following exposure to tear gas. At 9 a. m. he went to the barracks, took a drink of water, and suddenly collapsed. When seen by a medical officer forty-five minutes later he was dead. There is no history of previous complaints. Post-mortem examination revealed extensive coronary atherosclerosis of moderate degree. There was no infarction, but there was diffuse degenerative change without evidence of reparative scarring.



Fig. 5 (case 2) AMM 106594—This atheromatous plaque was in the left anterior descending coronary artery, reducing the lumen to a mere slit. There was no occlusion, although the myocardium showed advanced degenerative changes and the electrocardiogram was typical of acute infarction.

Case 14. This 35 year old white soldier was seen by a medical officer four days prior to his death. At that time he complained of vague chest pain, which did not appear to be significant. He did not seek further medical attention and died suddenly after breakfast. Post-mortem examination revealed that the coronary ostia were moderately narrowed by atherosclerotic changes in the base of the aorta. The coronary tree was diffusely and irregularly narrowed by atherosclerosis

TABLE III

Case	Age	Generalized Coronary Sclerosis	Localized Coronary Sclerosis	Occlusion	Infarction	Remarks
2	24		+	0	+	Lived 4 hours
3	24	+		0	0	Died suddenly
4	25	+		0	0	Died within ¼ hr.
5	26		+	+	+	Lived 31 days
6	28		+	+	+	Lived 19 days
8	33		+	0	0	Died suddenly
9	33	+		0	0	Died suddenly
11	34	+		0	0	Died suddenly
12	34	+		+	+	Lived 5 days
13	34	+		0	0	Died suddenly
14	35	+		0	0	Died suddenly
15	35	+		0	0	Died suddenly

with a particularly large plaque producing almost complete obstruction near the origin of the anterior descending branch of the left coronary artery. A recent thrombus was found partially, but not completely occluding the already markedly narrowed lumen. On examination the myocardium showed patchy degenerative inflammatory changes without evidence of reparative process.

Case 15. This 35 year old white soldier died suddenly in his quarters following his evening meal. There is no history of previous cardiac complaints. Post-mortem examination revealed extensive atherosclerosis involving all the coronary vessels, with the lumina reduced over 50 per cent in many places. The left anterior descending artery was reduced to a pin point 2 cm. from its origin by a plaque. No complete occlusion was found. Tiny patchy areas of degeneration were found microscopically, but no area of infarction.

Case 16. This 35 year old white soldier entered the Station Hospital complaining of the onset of severe precordial pain, associated with undue breathlessness while he was performing the rather strenuous task of negotiating the obstacle course. He showed transient elevation of the temperature and erythrocyte sedimentation rate, in addition to serial electrocardiographic changes considered

pathognomonic of recent infarction involving the posterior wall of the left ventricle. He made an uneventful clinical recovery and was discharged from the service twelve weeks after the attack.

Discussion

Although it is known that serious coronary disease may affect individuals of any age^{5,7}, its incidence below middle life is very low. White⁹ reports that of a large series of cases of myocardial infarction, only 0.7 per cent occurred below the age of 30, and 3.5 per cent more from 30 to 40. Because of its relative infrequency, it is natural to minimize this condition when considering the diseases of young adults. In the armed forces, however, there is such a concentration of youth that



Fig. 6 (case 5) AMM 90302—There is extensive sclerosis of this right coronary artery with thrombosis. An infarction involved the posterior portion of the interventricular septum and adjacent ventricular musculature.

a disproportionately large number of cases is being seen. Other factors that make us more cognizant of this uncommon condition are: (1) the adequacy of hospital facilities so that soldiers often receive a more detailed investigative procedure when ill than they might have received in civilian life; and (2) the universal autopsy policy that permits post-mortem examination in every case of death, thus uncovering findings which might otherwise be missed. While this paper was in the process of preparation, a report was published by the Army Medical Museum⁴ covering eighty cases of death from coronary disease in soldiers below the age of 37. Some of our cases are undoubtedly included in that series, but all are not because some of our fatal cases probably fell outside the time range used in that study. In a recent "War Number" of the American Heart Journal the finding of myocardial infarction in young soldiers was noted in reports from both

a general hospital⁸ and a station hospital.³ Although we are unable to say that the incidence of coronary disease below middle life is increasing, it is evident that our experience with the armed forces has made us aware of the fact that serious disease of the coronary arteries is not reserved for the aged and the physicians. One purpose of this study is to bring out that point.

Our pathologic findings differ from those of Blumgart, et al.^{1,2} who reported an unusually comprehensive study of coronary disease, but in an older age group; we feel, however, that our findings are not at all irreconcilable with their conclusions. The outstanding difference was in the rarity of occlusions found in the coronary arteries in our series as compared with theirs. To some extent this may have been due to the gross methods used in our post-mortem examinations as compared with their specialized technic. However, the major vessels were always completely dissected in our cases, and it is unlikely that a complete obstruction of great significance was missed. More pertinent, probably, is the fact that in 8 of the 12 autopsied cases death occurred suddenly or very quickly. In all of these cases there was definite, usually marked, coronary atherosclerosis, but in not one of these was a major coronary vessel found to be completely occluded. As suggested above, the mode of death in these cases must be considered as physiologic rather than anatomic in the sense that it was brought about not by destruction of substance but by disruption of function. In the 4 cases in which death occurred between four hours and thirty-one days after the clinical attack, we found 1 major occlusion each in 3 of the cases and a single marked localized narrowing in the fourth. Blumgart, et al.^{1,2} report that normal hearts show no physiologically significant anastomotic channels, so that infarction may be expected to follow complete obstruction of a large coronary artery; in contrast to this, significant anastomosis develops in hearts in which the coronary vessels are narrowed, so that a single occlusion is not likely to lead to myocardial infarction. In these young individuals, therefore, we must assume that adequate anastomosis had not yet developed; as a consequence, myocardial infarction developed upon closure of a single major coronary artery. One case is of particular interest. This soldier (case 2) was one of the youngest in the series, being only 24 years of age. Clinically and anatomically he had a myocardial infarction, which developed while performing heavy physical exertion. Two of the major coronary arteries were entirely normal, while the third (the left anterior descending) showed only a marked

luminal encroachment without obliteration. The occurrence of myocardial infarction without coronary occlusion is known but must certainly be unusual under circumstances as described here. This case is further evidence of the correctness of the present trend in terminology, emphasizing that the clinical syndrome that was originally popularized under the name of "coronary thrombosis" or "coronary occlusion" indicates in reality the occurrence of myocardial infarction.

Unfortunately, our study has offered us no clues toward the readier diagnosis of significant coronary disease in young people. We see many soldiers with complaints of "heart trouble" and "pain in the heart," and almost uniformly are able to label their symptoms as being noncardiac in origin. In support of the probable correctness of that interpretation is the fact that these soldiers have not become a part of the series we are describing, while the latter, for the most part, had little or no complaints and rarely sought medical attention. White⁹ notes that the diagnosis of coronary disease, aside from myocardial infarction, is made rarely in young individuals, 0.2 per cent of his large series being younger than 40 whereas 4.2 per cent of his infarctions occurred in this age group. Although we have not analyzed our figures statistically, our findings are similar; clinically recognizable angina pectoris has been very rare throughout the period during which we saw 8 cases of myocardial infarction and 8 cases of sudden death due to coronary disease in soldiers below the age of 36. From White's experience as well as ours, it is clear that we are failing to make the diagnosis of coronary disease in young adults until some serious or fatal complication arises. The fact that these men generally failed to seek medical attention suggests that the reason for this state of affairs is that the disease tends to remain "silent"; on the other hand, further investigation may reveal some clues which will be of value in detecting the cases earlier.

Summary

Sixteen cases of either myocardial infarction or fatal coronary disease in young male adults below the age of 36 are presented. In 4 of these cases the diagnosis of myocardial infarction was made on clinical grounds without anatomic confirmation; the remaining 12 died and were examined at necropsy. Precipitating factors were quite variable: One patient had no recognizable attack and the diagnosis was based on electrocardiographic features alone; in 13 cases the attack occurred during so-called ordinary activity; and in only two cases did it occur during extraordinary activity.

Of 7 cases in which electrocardiographic studies were made, 5 were interpreted as showing anterior wall infarction of the left ventricle; the other 2 showed the pattern of posterior wall involvement.

In the cases examined post-mortem, all 12 showed significant coronary disease. In 8 instances arteriosclerotic changes were found diffusely throughout the coronary tree, and in 4 cases the disease was confined to 1 major branch. In only 3 cases was complete occlusion of a major vessel found; in the other 9 no complete obstruction was found. Infarction occurred in 4 cases; no infarction was found in 8 cases. One heart with infarction had no coronary occlusion, but showed a large atheromatous plaque near the origin of the left anterior descending artery. Seven soldiers died quickly or suddenly, and 1 died within three-fourths of an hour after onset of severe precordial pain. Coronary sclerosis was found in all 8 of these cases, but not one of these showed complete occlusion of a major vessel. Death in these cases must be considered as "physiological," in that myocardial ischemia produced an irreversible rhythm, either ventricular fibrillation or cardiac standstill.

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THE USE OF THE SULFONAMIDES AND PENICILLIN IN WAR SURGERY

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This talk on the use and abuse of sulfonamides and, also, penicillin in war surgery is based largely on my own experience and observation while serving with the Fifteenth Evacuation Hospital in North Africa, Sicily and Italy.

The sulfa group alone was used in North Africa and Italy, as we had not been supplied at that

time with penicillin. We treated many wounded men in North Africa in the early part of the war, and in the early part of 1944 we received our first penicillin.

To take up the sulfonamides first, my personal reaction is that they did a great deal of good, used topically, at that time of the war; we gave up such use later, however. We had no penicillin at that time.

If you will recall, our early experience in this war was in Tunisia, Southern Tunisia, in a terrain that was largely sterile. It was a desert. The sun had been shining on that desert for centuries and centuries, and what bacterial growth was there was insignificant. There was no cultivation and no fertilization. Consequently, a wound experienced by a soldier in that terrain was not particularly infected.

The wounded men were treated with sulfanilamide powder at that time of the war, and all their wounds were sprinkled lightly with what we called star dust or holy powder. In addition, these men had all taken sulfonamide powder by mouth. Hence, the evaluation of the actual benefit derived from the topical use is difficult to arrive at.

The question of the use of the sulfonamides topically and whether they are beneficial is controversial. They are not nearly as important as, for instance, the complete and proper debridement of the wounds, immobilization and replacement of blood loss, but I feel its topical use at that time in the war was definitely justified.

As far as the abuse and the misuse of the sulfa group is concerned, there were many instances in which too much of the sulfa compounds were used. This resulted in caking and plugging the wound, preventing adequate drainage. Many times the wounded man had two or three applications of the sulfa powder before he was received in the hospital.

This excessive use of the sulfa group, plus the possible exaggerated sense of security experienced by the medical personnel because of its use, are possibly the only abuses to the use of the drug.

Early in the Tunisian campaign we were not as expert in the treatment of battle casualties as we were later on. The sterile sands, as I mentioned, largely uncultivated, without the bacterial flora that is associated with intensive farming and fertilization, was an ideal place in which to break in a group of civilian doctors to war surgery. I know that my own debridements were not extensive enough in the early part of the war.

Those of you who are acquainted with the types

of battle machinery we had to deal with, that is—the high explosive shell and the bomb, know that they presented a fragment type of injury. If you think for a minute of the speed at which the average rifle bullet travels, about 2,700 feet a second from the M-1 rifle as compared to 30,000 and 40,000 feet per second, at which rate of speed the fragments from the shells traveled, you will see that the type of wound caused by the two projectiles was entirely different.

The extremely rapid fragment will pulverize tissue widely. If it hits the thigh, it will make a small opening in the skin, and the muscle damage beneath that skin wound is tremendous. The muscle is pulped, and all of that has to be removed.

As I said, early in the war we civilian doctors who were taken from our civilian practices were not aware of those things. We treated many of those boys in a manner that, had they been wounded in Italy where the terrain was entirely different, our mortality rates would have been very high. I am sure that the use of the sulfonamides topically in that type of wound saved us a lot of catastrophes.

In Sicily our casualty rate was very light compared to the other campaigns. As you will recall, General Patton was running the show there, and we went through Sicily very fast. The sulfa group was used with more care in Sicily. We were catching onto the problems presented by war surgery. I might mention, too, that the whole Army was catching on. The war was new, and the mistakes that we made as medical officers and the mistakes that the line officers made in North Africa weren't repeated in Sicily and in Italy. We were no longer troubled with these wounds being caked with sulfonamide powder.

In Sicily we occasionally saw crystaluria and kidneys and ureters plugged with sulfa crystals. If you will recall the terrain in Sicily, a place where water is at a premium, you can possibly understand why that happened. The men were wounded while dehydrated. Many of the boys had not had a good drink of water for several days. With their being wounded in that condition then being given sulfa tablets and having a lot of sulfa powder sprinkled in their wounds, it isn't any wonder that we saw many of those cases plugged up, their ureters completely filled with crystals.

The abdominal wounds in this war were numerous and severe. We saw large numbers of shell fragment and bullet wounds. It is interesting that the only types of injuries I saw were those caused by the high explosive shell, the aerial bomb, the land mine and the bullet. Every soldier in

both opposing armies carried a bayonet, but at no time did I ever see a bayonet wound. That will recall, perhaps, to some of you Mauldin's cartoon in which Willie is holding up a bayonet in one hand and a rifle in the other and he says, "Joe, this can opener fits on the end of the rifle." He was just becoming aware of the fact that it was a weapon and not a can opener.

The perforating wounds of the abdomen with contamination from intestinal content offered us a serious problem. We treated them much as we would in civilian life. The perforations were closed; drainage was instituted, and 5 grams of sulfanilamide powder was sprinkled into the abdominal cavity. This was followed by the parenteral administration of the drug.

The manner of use of sulfa drugs will vary according to the type of injury and its location in the body. They should be sprinkled very lightly in quantity in scalp lacerations. They should never be used in the interior wounds of the cranium or intrathecally except in solution. Facial wounds can tolerate very small amounts of sulfonamides. If a lot of sulfonamide is placed in the wound of an ear or eyelid, for instance, it will not heal shut. The sulfonamides are valuable when used topically in wounds of the chest and neck. They should never be used in the pleura or pericardial cavities.

Wounds of the extremities tolerate these drugs very well. In cases of compound fracture, we use them fairly liberally followed with the oral use. As I mentioned in this particular part of the war we had no penicillin, so we relied entirely upon the sulfa group.

Wounds of the joint cavities, such as the knee-joint, should never be treated topically with sulfonamides. The joint capsule should be closed after cleansing the cavity, and penicillin should be injected into the joint cavity. Then, with proper immobilization and follow-up treatment, some amazing results can be obtained.

To have a wound of the knee-joint in war surgery not develop suppuration was an innovation because, as I understand it, in the First World War nearly every wound of the knee-joint resulted in a stiff limb.

I might mention, in regard to this caking action of the sulfonamides, there are other substances with which we experienced trouble in war surgery. One was the use of vaseline gauze. It seemed that they made us pack these wounds too tightly with vaseline gauze. In civilian life the pack in a wound is not left very long. In war surgery, however, when a man is wounded and has his wound packed with vaseline gauze, it may

stay there three or four days before it is removed, and at that time the vaseline gauze has acted as a plug rather than as a drain.

Another difficulty we had with vaseline gauze was in having the limb or extremity wrapped with vaseline gauze, a long strip removed from a sterile can, well soaked with vaseline, but wound around the extremity. At the end of three or four days (many times these men would go that long before their wounds were redressed) that vaseline gauze would have dried and, in drying, would have shrunk. That action, plus the swelling of the tissues, would sometimes cause a severe constriction.

The use of penicillin in war surgery, as you know, has brought about some remarkable advances. Such procedure as, for instance, secondary wound closures, primary nerve suturing and primary closure of wounds of the joints was practically unheard of in previous war experience. In our hospital we started using penicillin routinely in all wounded men in the summer of 1944. Prior to that, we reserved its use to patients with gas gangrene and anerobic streptococcal infection. Twenty-five thousand units of the sodium salt was the usual dose and was given every three hours intramuscularly. This treatment was started immediately upon admission to the hospital and continued for several days.

After four or five days, many of these wounds, if cleaned, were closed secondarily, and they healed by primary intention. That was a new thing in war surgery, something that had never been done before and, of course, could not have been done without the use of penicillin.

The routine practice of using penicillin in every case gave astounding results. Nearly all of the wounds remained uninfected, and to have an uninfected wound in war surgery was something very new.

Near the close of the war in Italy we had an opportunity to compare our treatment of the wounded with that of the German army medical department. At one place just north of the Po River in Italy, a town called Mantova, we were sent in to take over a German hospital and supervise the treatment of a large number of wounded. Their wounds were almost all infected. They had no penicillin, and they relied solely on a sulfa compound called "Marfanil." After a few days on penicillin, we started secondary closures on these wounded Germans, much to the amazement of the German doctors. At first they rather suspected us. I think they thought we were trying to completely abolish the wounded Wehrmacht by the secondary closure of their wounds. We

amazed those fellows in many ways, for instance, by the use of blood transfusion. The Germans used blood transfusion but in no scale comparable to the American Army Medical Corps. They were unaware that we were using plasma transfusions. I might mention that we had a lot of fun with some of the Germans. We would be giving them a transfusion of American blood. Invariably we would wait until about half the blood had run in, then would point to the blood and say, "Jude blut, very good blut." Of course, none of those Nazis wanted any Jewish blood running into their veins.

Another stunt we pulled with the German soldier, the Nazi, if he were not behaving in our hospital particularly well would be to make some remark to the nurse telling her to transfer the patient down to the Russian hospital. That is all it would take to bring that fellow to time, for none of them wanted to go to the Russian hospital. Of course, they didn't know there wasn't a Russian hospital within hundreds of miles.

The German doctors were draining most of their wounds with large rubber tubes. I have heard many doctors in our theater say that, in observing the German army medical corps, they were about ten to fifteen years behind the American Army Medical Corps.

Another strange practice among the German doctors was the routine use of strophanthin. Every German soldier got a hypodermic injection of strophanthin every four hours. We couldn't understand why and I still don't know why, but the German doctor who tried to explain it to me said that all wounded men needed strong hearts and that strophanthin strengthened the heart, so they gave all the wounded men strophanthin.

Many years ago, Ambrose Pare advised young doctors who had aspirations to become surgeons to follow the armies; he was sure they would learn the art and science of the practice of surgery by ministering to the wounded men upon the battlefield. Most of the doctors who have just been released from the Army in this war might question that a little bit because many feel they have forgotten more in the Army than they learned.

Be that as it may, I think that we may learn something from our experience in war surgery, and something that is applicable to our civilian practice, especially those principles concerning the use of sulfonamides and penicillin. For instance, our experience with the sulfonamides tells us that we should use them very sparingly. They should be sprinkled widely, and they should not be em-

ployed as drains by producing a cake which would plug the wound.

Wounds of the large bowel were treated in the Army by exteriorization and proximal colostomy. This is applicable, I think, to civilian practice. The revival of the Mikulicz procedure in the treatment of large bowel injuries was, I believe, brought about by the English in Libya. The Americans were quick to adopt it, and we saved many men by this method of treatment who surely would have died if primary bowel suture had been attempted. That is speaking only of the large bowel.

This treatment was enhanced by the use of sulfonamides and penicillin. In most of these we used both penicillin and the sulfonamides after we had access to the use of penicillin. We felt at that time we didn't use that combination due to any synergistic action, which probably does not exist, but because of a selective action on certain bacteria, the gram-negative bacilli in the colon being more susceptible to the sulfonamides than they are to penicillin. Sulfonamide was sprinkled topically into these abdomens at the time of operation and at the time of exteriorization of the wounded large bowel. It was given intramuscularly in 25,000 unit doses every three hours.

In summary, I have set forth some experiences in war surgery relative to the use of sulfonamides and penicillin, taking into consideration, first, the terrain; the time of use in this war; the use of the sulfa drugs topically, orally, and parenterally; and the uses of penicillin intramuscularly.

In closing, I might mention that I believe the biggest abuse of both drugs, sulfonamides and penicillin, will probably lie in certain short cuts that we may develop because of them and in our failure to apply sound surgical principles such as adequate drainage and complete and proper debridement because we have these two drugs to rely upon.

The danger lies in misplacing our confidence in these drugs, and, because of this misplaced confidence, we are apt to develop slipshod practices. New medicines should be considered as adjuncts to good surgical practice, not as substitutes for good surgical practice.

Discussion

Dr. Bernard C. Barnes (Des Moines): The local concentration of the sulfonamides in the peritoneal cavity amounts to about 75 to 100 times that which you can obtain in the blood stream locally. Consequently, in using it intraperitoneally, great care must be used. If you do sprinkle it in the abdomen, you must remember the blood concentration will rise

considerably, and this concentration may occur very rapidly, much more so than you might suspect. Hence, you have to be on the alert for this.

There is a definite, local bacteriostatic and even bactericidal action in sulfanilamide intraperitoneally. I don't think its use should be abandoned entirely, although it should be used sparingly. The thing we noticed mostly in the Pacific theater was the toxic symptoms which occur, due to excessive amounts of sulfanilamides being given to soldiers prior to their entrance into the general hospital in which I was stationed. Toxemia would develop. In many instances we saw nausea, vomiting, dermatitis, cyanosis, and hepatitis with jaundice. I might say the hepatitis with jaundice in that theater was a disturbing thing, because we never could tell early whether it was a true hepatitis or whether it wasn't, or whether we were dealing with hemolytic anemia or some other disease completely unrelated to the blood therapy. There was crystal urea, anurea, even a few leukopenias, and some aplastic anemias.

I think the crystal urea was the one thing most troublesome, and I think in civilian practice we should constantly keep it in mind. I don't think in anything are we so duty bound to correlate our efforts so closely with the laboratory as we are in the use of chemotherapy.

The surgeon must at all times keep a careful check on the blood levels of the sulfonamides, and, if using penicillin, he should certainly have the laboratory culture of the organism if at all possible and find out whether it is penicillin-sensitive or not.

The idea of giving these drugs promiscuously to cases caused by organisms on which they will not be effective is, of course, not good surgery. Sulfathiazole has been used by many locally and was used some in the Army. It definitely delays wound healing and should never be used locally.

The other thing I think we should bear in mind is the acquired sensitivity to sulfonamides. An individual may acquire sensitivity from a few doses or from a course of the sulfonamides; on administering the second course, without careful inquiry into his past history, we will find ourselves with some toxic symptoms developing early and perhaps some unfortunate end results.

I think it is very important in the use of sulfonamides to maintain the fluid balance—much more so, perhaps—than without their use. I think frequent urinalysis with blood level determinations is indispensable.

We must remember that, in using sulfonamides locally and by mouth, reduction of the alkaline reserve occurs, and every effort is to be made to help it build up.

I feel that a word should be said in favor of sulfasuxidine, because it is really an intestinal bacteriostatic agent. The bacterial count in the intestinal tract can be reduced almost to zero with it, and this drug will certainly be very useful in surgery on the large bowel.

Penicillin, prophylactically and therapeutically, will certainly continue to be used. Very frequently temperature elevation will occur along with an excessive amount of penicillin use. Occasionally, in discontinuing the drug, the temperature will fall to normal.

PREVENTIVE MENTAL HYGIENE IN IOWA

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The direct appeal of an ill person is so much more compelling than the abstract conception of one who may fall ill that preventive medicine lags behind direct medical relief. Careful consideration, however, often shows that medical efforts spent in the preventive field can eliminate far more ill health and unhappiness than they can at the bedside. This fact, well demonstrated among the contagious diseases, is now beginning to be understood in the field of psychiatry. Much discussion over the extent to which the mental defects of feeble-mindedness and insanity are due to hereditary factors¹ has led to definite, even if not quantitatively, exact conclusions: (1) that the children of those with mental defects may be mentally normal and, (2) that the proportion of such children inheriting mental defects is high. To this a sociologist would add that there is little probability of a satisfactory upbringing for a child, even if normal, born to a parent with a mental defect.

For these reasons the preventive value of sterilization of those with mental defects is being more and more realized. It has been shown by numerous investigations,^{2,3} that tubectomy of the ovarian or sperm tubes causes no change in any of the sexual powers, desires, or characteristics of the patient. If this fact were generally understood by the public, which now tends to confuse sterilization with its usual agrarian form, castration, it would be much more extensively used for the protection of the mentally defective and of the community.

The legal aspect of sterilization is not generally understood. In no state is there a law which prohibits tubectomy by a private physician of a mentally competent person. Certain states have provisions covering the method whereby the legal consent of a mentally incompetent person may be secured from his parent or guardian, and several states which have laws authorizing eugenic sterilization provide that inmates of institutions may be sterilized for such reasons only after the procedure set forth in the law has been carried out.⁴

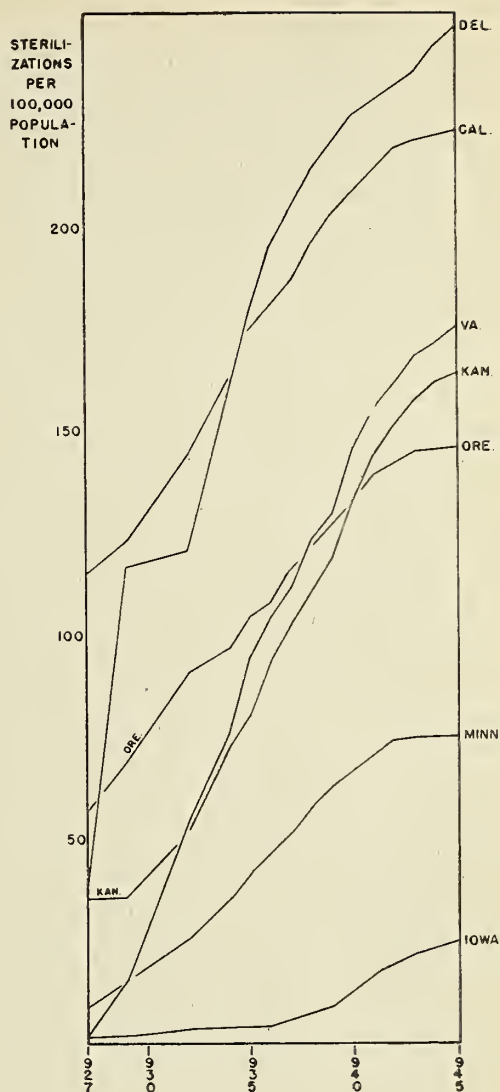
Iowa's sterilization law was passed in 1929 and

was amended in 1935.⁴ It establishes a State Board of Eugenics composed of the superintendents of the four state hospitals for the insane, the two institutions for the feeble-minded, and of the women's reformatory. The members of the Board and the wardens of the penitentiary and the men's reformatory are required to report to the Board feeble-minded or insane persons, and certain others, "who are a menace to society." At a meeting of the Board the case is considered. If a child of a person so reported would have an inherited tendency to insanity or feeble-mindedness, or would probably become a social menace or ward of the state, sterilization is to be ordered and carried out at state expense. The subject of the order or his parent or guardian is given the right to choose the physician to carry out the order. The law makes it possible by court action to enforce the order of the Board, but in practice sterilizations have not been carried out except with the consent of parent, guardian, nearest of kin or personal friend. At present cases are seldom submitted to the Board until such consent has been secured in writing.⁵

Sterilization is to be performed by any method approved by the Board provided it is not castration and does not involve the removal of sound organs from the body. The law does not apply to and in no way interferes with sterilizations for therapeutic purposes.

Statistics collected by the Human Betterment Foundation and more recently by Birthright,⁶ the national organization for education regarding the benefits of selective sterilization, make it possible to review the extent to which this preventive law has been applied. At the end of 1945 a total of 649 sterilizations had been authorized by the Iowa Eugenics Board. When it is remembered that this may mean liberty to 649 individuals who would otherwise need to be segregated throughout their reproductive life, it can be realized that it is an important accomplishment. Furthermore, such releases, taking the annual cost of custody of a mental defective as approximately \$238,⁷ may mean a direct annual saving to the state of \$125,000.

Even though these results are impressive, it seems worth-while to consider whether other Iowans might well be given similar protection. To answer this question we should know what proportion of the mentally defective persons within the state are still fertile. Unfortunately, no such census is available. However, surveys of other communities are available. In a careful review of a section of Baltimore 1.2 per cent of the popu-



lation was found to be feeble-minded.⁵ A similar survey in Tennessee⁶ yielded 1.5 per cent. The 1944 report of the North Dakota Commission for the Control of the Feeble Minded lists 7,570 persons, or 1.2 per cent of the state's population as mentally defective. Two surveys of school children^{7,8} have shown even higher proportions, 3.2 and 4.5 per cent respectively.

If the lowest of these ratios, 1.2 per cent, is applied to Iowa's 1940 population, it indicates that there are probably 30,000 mentally deficient persons in Iowa. Of these only 649, or less than 1 in 47, can have been reached by the protective sterilization program.

Reliable though indirect evidence regarding the need for protection by sterilization is also available through the experience of other states. The

statistics indicate that some of these, notably California and Virginia, have considered it worthwhile to protect larger numbers from procreation, having applied their laws before the end of 1945 (the most recent year for which complete results are available) to 17,835 and 4,958, respectively. To correct for the differences in size of the states, the numbers of sterilizations per 100,000 population^E have been calculated and are given for each year available in Figure I. These results show that at the end of 1945 the most intensive program was that of Delaware with 250 reported sterilizations per 100,000. California and Virginia had reported 231 and 175 respectively, while Iowa's total was only 25. States may differ in the proportion of their inhabitants which are mentally defective and in the degree of incapacity which they are compelled to recognize as a defect. Thus a borderline case, adjudged in Manhattan incapable of living outside an institution, might possibly prove an economically successful sheepherder in the Rockies. However, the difference of roughly 10 to 1 in the application of the selective sterilization law seems far beyond any statistical error. That it is not one of geography is indicated by the experience of the neighboring state of Kansas, which has found it a useful procedure for 165 cases per 100,000.

When all the states reporting were considered, it was found that at the end of 1943, twenty-one states had performed more sterilizations per capita than had Iowa. These are, in the order of descending ratios, Delaware, California, Virginia, Kansas, Oregon, North Dakota, South Dakota, New Hampshire, Minnesota, Utah, Vermont, Nebraska, Michigan, Wisconsin, North Carolina, Indiana, Washington, Montana, Connecticut, Mississippi and Maine.

The 52 sterilizations reported in Iowa in 1945 were at the rate of 2.0 per year, per 100,000 inhabitants. This was exceeded by 11 states, in the following order: Delaware with the maximum of 7.1 per 100,000; Virginia, California, and New Hampshire, in excess of 4; followed by Utah, Indiana, North Dakota, North Carolina, Georgia, Vermont and Oregon.

The value of the results in California is indicated by the estimate of Butler⁹ that for the Sonoma State School alone it results in an annual saving of \$650,000 in costs for the inmates who would otherwise have required state maintenance. A part of the savings which might have been made (together with additional freedom for a corresponding number of Iowans) is indicated by the report of the Board of Control of State Institutions for 1942 and 1944. These show that

146, or 18 per cent of those admitted because of feeble-mindedness during the previous four years, had parents, one or both of whom were insane or feeble-minded. If only those cases in which the mental condition of the parents was known were considered, it was found that 21 per cent had defective parentage. Had this condition of the parent been recognized before the time when the mentally deficient child was born and had an adequate sterilization program then been in effect, much of the present capacity and expense of the institution would be unnecessary.

A case history from one of Iowa's hospitals for the insane illustrates the prevention which sterilization might have accomplished. An insane female patient gave birth to a daughter. The child spent the first eighteen years of her life at a state school for the feeble-minded at a cost to the taxpayer of more than \$4,000. At the end of this time she was released without sterilization. She married one of the mentally deficient boys whom she had met at the institution and, after producing two children, is in the midst of the third pregnancy in less than three years. The husband is incapable of holding a job for any length of time, even during the high employment period of the war. The mother's intelligence is insufficient to care for the children at even a minimum standard of decency, as she knows nothing of nutrition, sanitation or child care, and seems incapable of learning.

It is too early to secure definite indications of the mental capacity of the grandchildren, but it seems probable that Iowa's payments for the insane patient's offspring will continue for many years to come.

While the initiation of this protective program is largely in the hands of the psychiatrists and those dealing with the mentally deficient, an indispensable element of it lies in the hands of every practitioner. At present there is obstruction because the general public, including the patients and their parents and guardians, tend to consider sterilization the equivalent of castration. This hindrance could be eliminated if every physician would let his practice know that the operation does not interfere with satisfactory marriage or change sexual responses.

It has been shown that sterilization deprives the mentally defective of nothing but the capacity for parenthood, a function which places upon them unusually heavy financial and psychic loads. Furthermore, it is welcomed as a protection by most of the mentally defective who understand its results. Therefore, since less than 1 in 47 of the probable number of Iowa's feeble-minded have

been protected by sterilization, it would seem that for the good of the state's present and future generations this measure of preventive hygiene might well be given a more widespread application.

FOOTNOTES

- A. A useful summary of the sterilization law in each state is contained in "Mental Hygiene Laws in Brief" of the National Committee for Mental Hygiene. The provisions of the laws are also reviewed and compared in "Eugenic Sterilization in the United States" by James E. Hughes, Supplement No. 162 to the Public Health Reports obtainable from the United States Government Printing Office.
- B. A summary of the law together with the blanks needed to initiate consideration of a patient may be secured from the Iowa Eugenics Board, Department of Health, 1027 Des Moines Street, Des Moines, Iowa.
- C. Obtainable without charge from Birthright, 5617 Waterbury Circle, Des Moines, Iowa.
- D. The annual cost does not include the capital investment of \$1,450 for each inmate.
- E. Population extrapolated from 1930 and 1940 censuses.

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CONFERENCE
Dec. 2, 1946

Summary of Clinical Record

On Aug. 6, 1946, this 61 year old white male entered the medical service complaining of "heart trouble." Two years earlier he had begun to notice shortness of breath and increasing fatigue associated with exertion. Two and one-half months before admission he had to quit work because of this difficulty. He was hospitalized elsewhere for two brief periods, with transient improvement each time. About July 20 swelling of the ankles developed which rapidly extended to the level of his knees. About the same time the regions of the anterior chest and the right upper quadrant of the abdomen became sore. His physi-

cian stated that digitalis and sedatives had been prescribed. The patient had known for several months that he had high blood pressure. He denied having any symptoms referable to rheumatic fever.

His past health had been excellent. He had worked as a farmer until 1943; then he had taken a job in a war plant, where occasionally he was exposed to chlorine fumes and probably magnesium dust. Following exposure to chlorine fumes he had had a severe transient cough and hemoptysis.

At the time of admission he appeared to be acutely ill. There was dyspnea without exertion and some cyanosis. The skin was moist from perspiration, and there were excoriations over the arms and legs. Pitting edema was present up to the knees.

The conjunctivae appeared dusky red. On fundoscopic examination the small arteries were observed to be narrow and tortuous with arteriovenous nicking. The neck veins were distended when the patient was lying in Fowler's position.

The respiratory movements were labored, but the chest excursions appeared full and symmetrical. The respiratory rate was 32 per minute. Moist râles were heard in both bases. The area of cardiac dullness extended to the left axillary line. The rhythm was totally irregular. The apex rate was recorded as being 140 per minute. The aortic second sound was louder than the pulmonary second sound. The mitral second sound was said to be rasping in character. The blood pressure measured 170/100.

The brachial and radial arteries were tortuous and hard. The pulsations in the posterior tibial and dorsalis pedis arteries could not be elicited. The liver margin was palpated two to three finger-breadths below the inferior costal margin. There was generalized abdominal tenderness, most intense over the right lobe of the liver.

The penis was edematous. The rectal tone was estimated at 80 per cent of normal. The prostate was moderately enlarged and compressible.

Examination of a voided specimen of urine revealed 1+ albumin. On the day following admission examination of the blood revealed 13 grams of hemoglobin per 100 cc., 4.12 million erythrocytes and 9,200 leukocytes per cu. mm. A leukocyte differential count showed 68 neutrophils, 23 lymphocytes, 8 monocytes, and 1 band polymorph in 98 cells counted. The blood Kolmer, Kahn, and Kline reactions were negative. Three different estimates of the blood urea nitrogen revealed values ranging from 16 to 24 mg. per

100 cc. The creatinine level on each of these occasions was 1.0 mg.

A teleoroentgenogram of the chest revealed obliteration of the inferior half of the right lung field by a homogeneous shadow which appeared to be fluid. The left costophrenic angle appeared clear. There was accentuation of the bronchovascular markings in both lung fields, radiating peripherally from the hilar regions. The heart appeared enlarged.

A four-lead electrocardiogram, obtained on the day following admission, revealed auricular fibrillation with a ventricular rate of 140 per minute, ventricular ectopic beats, and digitalis effect.



Fig. 1. Thrombus removed at operation.

The treatment of the congestive heart failure consisted of bed rest, continuous intranasal oxygen, sedation, full digitalization and aminophylline orally in a dose of gr. iii t.i.d. A maintenance dose of digitalis was given after the sixth day.

In spite of these active therapeutic measures his course was unsatisfactory. The cardiac rate slowed, but he remained dyspneic. Disorientation was frequently present. Nine days after admission he suddenly developed pain in the left foot. Examination shortly afterwards revealed coolness halfway up the calf. He was placed on an oscillating bed and given papaverine intravenously twice each day and whiskey three times daily. The foot did not become gangrenous and showed variation in skin temperature from time to time. Generally, in the next few days, he showed some signs of improvement, but disorientation persisted. Then, suddenly at noon on the seventeenth day of his hospitalization, he developed very severe abdominal pain. Between fifteen and thirty minutes later when he was examined by the surgical resident the findings were described: "Abdomen very tender throughout. Flat. Board-like rigidity in all quadrants. No peristalsis heard on auscultation. Patient sweating, skin clammy. Rectal—no blood."

Shortly thereafter an abdominal exploration under local anesthesia, augmented by small amounts of nitrous oxide and ethylene, was carried out by Dr. E. S. Brintnall. He found color changes indicating interruption of the blood supply to almost all the small bowel and the proximal portion of the colon. A thrombus was found in the superior mesenteric artery, and after its removal the color of the involved bowel returned to normal. The immediate postoperative course was encouraging and some optimism was held for recovery. Heparin administration was started at once. However, increasingly severe shock appeared, and in spite of active measures employed to combat it, the patient died about fourteen hours after operation.

Clinical Discussion

Dr. R. T. Tidrick (General Surgery): This patient's clinical picture was typical of what one would expect from acute mesenteric thrombosis. The condition is not rare. Frequently it occurs in patients being treated for cardiac decompensation. The superior mesenteric artery is most commonly involved, its accompanying vein less frequently, and the inferior mesenteric artery and vein rarely. This patient suffered involvement of most of the small bowel and the proximal portion of the colon. Some surgeons advocate waiting a few hours before operation to determine how much of the bowel actually will be deprived of its blood supply. A sharper line of demarcation will be found, but the risk incident to such delay is great, and it is not to be recommended. In this case, less than two feet of small bowel was unaffected by the occlusion, and resection of the involved portion of bowel was considered to be too formidable an operation. Patients usually do not tolerate well the removal of large portions of the small bowel, although a few cases¹ have been reported in which the patients have lived for long periods after such an extensive resection. An attempt was made, therefore, to remove the arterial obstruction, which proved to be a thrombus. This was done and the arterial wall sutured. The normal color of the bowel was restored.

Summary of Necropsy Findings

Dr. E. D. Warner (Pathology): The intestine from about the mid-point of the jejunum to the middle of the transverse colon was gangrenous. The mesentery of the ileum and lower jejunum was edematous and dark red in color. The peritoneal cavity contained a small amount of blood-stained fluid in which a few fibrin threads were found. The loops of small bowel were greatly dilated and contained semi-fluid material which was brown and purple in color. The mucosa was deeply congested and cyanotic. The appendix was gangrenous but not distended with pus. The operative site over the superior mesenteric artery showed a small ecchymosis but there was no evi-

dence of leakage through the incision in the arterial wall. A small fresh blood clot had formed in the site of the arterial incision and a larger, rather fresh blood clot occluded the artery at this point. This clot extended into a small branch of the superior mesenteric artery near its origin. Portions of the thrombus appeared to be some days old in that the formed elements of the blood in them had disintegrated. For this reason, it is not believed that the thrombus formed in its entirety after the operation. Other parts of the clot were very recent and there was no evidence of organization in any part. There



Fig. 2. Appearance of the small bowel at autopsy.

was mild acute inflammation of the adventitia and outer media.

The aorta and left chambers of the heart were searched carefully to determine if a mural thrombus had been present proximal to the point of occlusion. None could be found. One small mural thrombus was found immediately above the bifurcation of the aorta. This could account for the embolic occlusion of the femoral artery or one of its branches. Its location distal to the opening of the superior mesenteric and renal arteries eliminates this thrombus as a focus for the occlusive phenomena in the bowel and kidney (there were old and recent infarcts in both kidneys). There was generalized sclerosis of the small and medium sized arteries, but no suggestion of arterial occlusion from this cause. Arteritis was seen in the superior mesenteric artery, but this finding could be explained by operative trauma 14 hours before death.

Mural thrombi frequently occur in the auricles and their appendages in a heart which has been fibrillating. No thrombi, or evidence of the previous existence of such were found in this case. Inflammatory lesions occur in arteries under certain conditions. These are almost never seen in the adventitia, however, unless the cellulitis has spread there from the intima and media, or from adjacent tissues. Arteritis of that type is usually primary in the media.

The heart was enlarged (weight 400 gm.; normal weight, 270-360 gm.) and there was chronic passive congestion of lungs, liver and spleen. There was mild acute inflammation of the esophageal mucosa, probably a result of a decompression tube within the esophagus. The myocardium showed mild perivas-

cular fibrosis with a few chronic inflammatory cells collected in these foci. The prostate was enlarged, hyperplastic, and subacutely inflamed.

Necropsy Diagnoses

Thrombosis of superior mesenteric artery.

Gangrene of lower jejunum, ileum, cecum, ascending colon and proximal half of transverse colon.

Renal infarcts, old and recent, bilateral.

Recent operation: thrombectomy, superior mesenteric artery.

Atherosclerosis, generalized, moderately severe, with coronary sclerosis.

Cardiac hypertrophy and myocardial fibrosis.

Chronic passive congestion of lungs, liver, and spleen.

Mural thrombus, abdominal aorta.

Hyperplasia of prostate with subacute prostatitis, mild.

Dr. Tidrick: Could the various medications have had any effect on blood coagulation? Do cardiac drugs tend to make arterial occlusions any more likely? How frequently does intravascular clotting occur, and can you diagnose it?

Dr. L. E. January (Internal Medicine): Intracardiac thrombosis is extremely common. It occurred in 34.4 per cent of the cases in a series of autopsied patients dying of heart disease. When one adds to

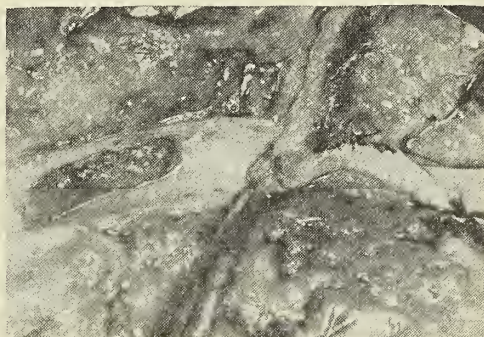


Fig. 3. Appearance of the thrombus in the superior mesenteric artery after it was opened at autopsy.

this the chance of thrombosis developing beyond the heart as the result of intimal damage due to arteriosclerosis or trauma, the possibility of arterial embolic accident seems quite great. Mural thrombosis occurs most commonly after myocardial infarction due to coronary occlusion. Any other process which damages the endocardium may give rise to intracardiac thrombosis. It is seen frequently in rheumatic heart disease, particularly when mitral stenosis and auricular fibrillation exist. In this situation stasis of blood is a contributing factor. Thrombosis occurs in other types of heart disease, especially in the course of congestive heart failure, particularly if auricular fibrillation is present. The auricular appendages are the usual site of thrombosis in such cases. Embolic

accidents are common in acute and subacute bacterial endocarditis. I know of no way that one can diagnose intracardiac thrombosis prior to an embolic accident except that in acute and subacute bacterial endocarditis vegetative lesions are invariably present.

One might expect that digitalis would increase the incidence of embolic accidents when intracardiac thrombosis is present because of the increased force of systolic contraction produced by the drug. In practice this is not true, and the improved cardiac function due to digitalis lessens the possibility of additional thrombus formation. The theory that digitalis increases the coagulability of the blood has not been substantiated. In auricular fibrillation the sudden restoration of a normal cardiac mechanism with

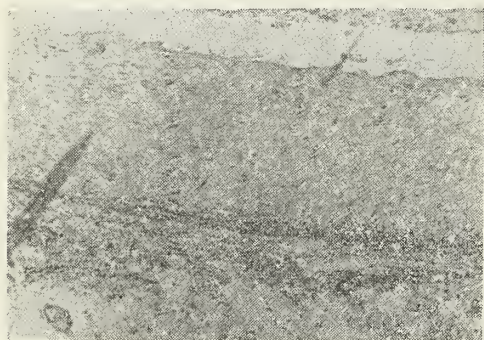


Fig. 4. Photomicrograph of wall of superior mesenteric artery at the site of thrombus showing acute cellulitis in the adventitia.

quinidine is said occasionally to cause an embolic accident. This has been overstressed in the past, and such accidents occur with no greater frequency than in those patients with auricular fibrillation who do not receive quinidine. I would like to ask if the foramen ovale was patent in this patient? This could account for the presence of an embolus in the systemic arterial tree which had formed in the venous system.

Dr. Warner: The foramen ovale was not patent. Paradoxical embolism is extremely rare and is probably limited to those instances in which there is an extremely high pressure in the right auricle as a result of stenosis of the pulmonary valve. I have seen only one such case.

Dr. Tidrick: Has superior mesenteric embolectomy ever successfully been performed?

Dr. E. S. Brintnall (General Surgery): I have found no reference in recent literature to embolectomy or thrombectomy of the superior mesenteric artery. Such a procedure, in this case, was essential because of the amount of intestine involved. Except for the upper 18 inches of jejunum, the entire small bowel was involved and, in addition, the right half of the colon showed vascular insufficiency.

With reference to technic, the incision in the artery should be made just distal to the embolus for two reasons: (1) should the embolus be broken up,

the fragments can be recovered and are not merely displaced distally in the vessel or its branches; and (2) operative damage, should it occur to the vessel, is best located as distal as possible to prevent additional interference with circulation.

I believe that the entire embolus (or thrombus) was grossly removed. Complete removal was indicated by the free bleeding following its removal and by the immediate return of the color of the involved intestine to normal. Thrombosis at the side of embolectomy is quite common. At times, a second exploration with removal of the second thrombus produces good results.

The ideal treatment of peripheral arterial embolism is prompt (within four hours) removal of the embolus by means of suction, milking, or thumb forceps. Following this, intima-to-intima repair of the arterial incision with fine arterial silk is indicated. The vessel should have heparin solution injected during the operation, and immediate postoperative heparinization should be instituted. During operation, periarterial sympathectomy should be done by stripping the adventitia. This tends to prevent postoperative arterial spasm.

Many arterial mesenteric emboli involve small segments of intestine, in which instances resection of the involved segment and anastomosis is indicated. In a case with such extensive involvement as this, embolectomy seemed to offer the patient his only hope of survival.

Dr. Warner: Some of the thrombus was definitely older than 14 hours. I suspect that small fragments of the old thrombus remained. New thrombus material probably formed on this surface.

Dr. E. L. DeGowin (Internal Medicine): The problem of anticoagulant therapy is far from settled. It is difficult to evaluate its effect in patients. Heparin and dicumarol are valuable tools and have been extensively used. Much of the current feeling about these drugs is based on statistical analysis from data which is statistically unreliable. Inadequate controls were used and other variables have entered into the problem and these have not been reliably evaluated. The question is: Once a thrombus has formed, will prolonging the prothrombin time prevent the formation of additional clot? Will these substances really keep a clot from forming? I am skeptical. Clots do form in stored blood despite anticoagulants in far higher concentrations than it is possible to attain in a patient.

Dr. Warner: I think the answer eventually will be found statistically. Heparin will decrease the tendency of thrombi to develop. It also will tend to check the growth of thrombi already formed. Dicumarol action depends on preventing prothrombin from forming. Heparin inactivates thrombin already formed and interferes with thrombin formation. Any influence these drugs may have in a case of this type should be a favorable one.

REFERENCE

1. Meyer, H. W.: Acute superior mesenteric artery thrombosis. *Arch. Surg.*, liii:298-303 (September) 1946.

STATE DEPARTMENT OF HEALTH

Walter L. Biering

Causes of Death—1945

Information obtained from U. S. Public Health Service

"Fewer deaths occurred in the United States in 1945 than in either of the two preceding war years, according to figures released by the U. S. Public Health Service. A total of 1,401,719 deaths were reported in the United States in 1945 as compared with 1,411,338 in 1944; 1,459,544 in 1943, and 1,385,187 in 1942.

"In the first ten months of 1946 there were an estimated 1,162,000 deaths in the United States as compared with 1,144,273 in the first ten months of 1945. All figures are for the continental United States and exclude deaths among the armed forces overseas.

"Deaths from the major infectious diseases declined to new lows in 1945. The year set a record low for pneumonia and influenza. The total of 68,386 deaths from these respiratory causes was 8.2 per cent less than the previous minimum of 74,532 deaths in 1942 and 16.4 per cent less than the number reported for 1944.

"Tuberculosis continued its decline in 1945. There were 52,916 deaths from this cause in the United States in 1945, 3.3 per cent less than the number in 1944 and fewer than in any previous year.

"Heart disease, cancer, and intracranial lesions strengthened their positions at the head of the list of leading causes of death. Heart disease deaths accounted for 30.3 per cent of the reported deaths in 1945 as compared with 29.6 in 1944. Cancer, the second leading cause of deaths, claimed 12.7 per cent of the total as compared with 12.1 in 1944. The third leading cause of death, intracranial lesions of vascular origin, was responsible for 9.2 per cent of all deaths in 1945 as compared with 8.8 per cent in 1944.

"An increase in motor-vehicle accident deaths from 24,282 in 1944 to 28,076 in 1945 overbalanced a decrease of 3,113 in the number of deaths from other accidental causes. All accidental causes accounted for 95,918 deaths in 1945 as compared

with 95,237 in 1944. The greater part of the increase in the motor-vehicle accident death rate occurred in the second half of 1945 after gasoline rationing had come to an end.

"The ten causes of death which were found in the lead in 1945 are those which headed the list in the prewar period 1939-1941. With the exception of motor vehicle accidents, the ten causes rank in 1945 in the same order of importance as in the period 1939-1941. Due chiefly to wartime restrictions on driving, motor vehicle accidents dropped from eighth place as a cause of death in 1939-1941 to tenth place in 1942.

"The ten leading causes of death in the United States are listed in table 1 which follows. Table 2 gives the number of deaths and death rate per 100,000 for selected causes for the United States in 1945."

TABLE I TEN LEADING CAUSES OF DEATH: UNITED STATES, 1944-1945				
Cause of death	Number of deaths		Per cent of all causes	
	1945	1944	1945	1944
All causes	1,401,719	1,411,338	100.000	100.000
1. Diseases of the heart	424,328	418,062	30.3	29.6
2. Cancer and other malignant tumors	177,464	171,171	12.7	12.1
3. Intracranial lesions of vascular origin	129,144	124,250	9.2	8.8
4. Nephritis	88,078	91,687	6.3	6.5
5. Pneumonia (all forms) and influenza	68,386	81,804	4.9	5.8
6. Accidents excluding motor-vehicle accidents	67,842	70,955	4.8	5.0
7. Tuberculosis (all forms)	52,916	54,731	3.8	3.9
8. Diabetes mellitus	35,160	34,948	2.5	2.5
9. Premature birth	31,614	33,120	2.3	2.3
10. Motor-vehicle accidents	28,076	24,282	2.0	1.7

TABLE II NUMBER OF DEATHS FROM SELECTED CAUSES and RATES PER 100,000 IN THE UNITED STATES—1945			
Cause of death	Number of deaths		Rate per 100,000
	1945	1945	
All causes	1,401,719	1,062.1	
Typhoid and paratyphoid fever	534	0.4	
Cerebrospinal (meningococcus) meningitis	1,728	1.3	
Scarlet fever	303	0.2	
Whooping cough	1,752	1.3	
Diphtheria	1,598	1.2	
Tuberculosis (all forms)	52,916	40.1	
Tuberculosis of respiratory system, etc.	48,879	37.0	
Tuberculosis (other forms)	4,037	3.1	
Dysentery	1,599	1.2	
Malaria	443	0.3	
Syphilis	14,062	10.7	
Measles	307	0.2	

Poliomyelitis, polioencephalitis (acute)		
Cancer and other malignant tumors	177,464	134.5
Cancer of digestive organs and peritoneum	80,204	60.5
Cancer of the female genital organs	22,345	16.9
Cancer of the breast	17,133	13.0
Cancer (other sites)	57,782	43.8
Acute rheumatic fever	1,341	1.0
Diabetes mellitus	35,160	26.6
Exophthalmic goiter	2,468	1.9
Pellagra (except alcoholic)	914	0.7
Alcoholism (ethylism)	2,293	1.7
Intracranial lesions of vascular origin	129,144	97.9
Diseases of the heart	424,328	321.5
Chronic rheumatic diseases of the heart	24,792	18.8
Diseases of coronary arteries and angina pectoris	131,437	99.6
Diseases of the heart (other forms)	268,109	203.2
Pneumonia (all forms) and influenza	68,386	51.8
Bronchopneumonia	28,794	21.8
Lobar pneumonia	23,299	17.7
Pneumonia (unspecified)	6,103	4.6
Influenza	10,190	7.7
Ulcer of stomach or duodenum	8,958	6.8
Diarrhea, enteritis, and ulceration of intestines	11,465	8.7
Appendicitis	6,697	5.1
Hernia and intestinal obstruction	11,621	8.8
Cirrhosis of the liver	12,541	9.5
Biliary calculi, etc.	6,702	5.1
Nephritis	88,078	66.7
Diseases of the prostate	7,443	5.6
Diseases of pregnancy, childbirth, and the puerperium	5,668	4.3
Puerperal septicemia	2,000	1.5
Puerperal toxemia	1,405	1.1
Hemorrhage, trauma and shock	1,729	1.3
Other puerperal causes	534	0.4
Congenital malformations	16,187	12.3
Premature birth	31,614	24.0
Suicide	14,782	11.2
Homicide	7,412	5.6
Accidental deaths	95,918	72.7
Motor-vehicle accidents	28,076	21.3
Other accidents	67,842	51.4
Senility, ill-defined and unknown causes	28,981	22.0
All other causes	129,726	98.3

Poliomyelitis in Iowa—1946

During the period of July-December, 1946, reported cases of poliomyelitis totaled 606; cases for the entire year numbered 633. With reports of 204, 204 and 320 cases for the years 1943, 1944 and 1945 respectively, the occurrence of this disease has been above that expected for the past four years. In 1941 and 1942, with 41 and 72 cases for those years, the reported prevalence of poliomyelitis was below average after the year 1940, when 929 cases were notified to the State Department of Health.

In a series of 248 case reports assembled

through courtesy of attending physicians, 142 or 57.3 per cent of the patients were males and 106 or 42.7 per cent were females.

The following table presents information pertaining to residual paralysis, as stated on 264 case reports returned by attending physicians in 1946.

POLIOMYELITIS IN IOWA—1946

PEROMYELITIS IN IOWA—1946					
Ages of patients	Total patients	Residual paral.	Deaths	No residual paral.	Per cent with no residual paral.
Under 20 years	218	108	8	102	46.8
Above 20 years	46	24	6	16	34.8
Total, all ages	264	132	14	118	44.7

Although fatalities as recorded on the case reports total 14, a case fatality of 5.3 per cent, it is encouraging to note that 118 or 44.7 per cent of the patients were stated as having no residual paralysis resulting from the attack of poliomyelitis.

POSTGRADUATE COURSE IN OPHTHALMOLOGY

The George Washington University Department of Ophthalmology is planning the resumption of the William Thornwall Davis Intensive Postgraduate Course in Ophthalmology, February 3-8, 1947. These courses have been given annually except during the war, when they were temporarily discontinued.

The following guest lecturers will participate: Dr. F. Heed Adler, Philadelphia; Dr. J. Mason Baird, Atlanta; Dr. S. Judd Beach, Portland; Dr. Hermann M. Burian, Boston; Dr. Ramon Castroviejo, New York City; Dr. C. Alvin Clapp, Baltimore; Dr. F. Bruce Fralick, Ann Arbor; Dr. Deane B. Judd, Washington, D. C.; Dr. Peter C. Kronfeld, Chicago; Dr. Walter I. Lillie, Philadelphia; Dr. Angus L. MacLean, Baltimore; Mr. Philip L. Salvatori, New York City; Dr. Harold C. Scheie, Philadelphia; Dr. Edmund B. Spaeth, Philadelphia, and Dr. Frederick W. Stocker, Durham, N. C. This is a didactic course of one week, Monday through Saturday, from 8:30 a. m. to 5 p. m. Subjects of clinical interest to the practicing physician doing eye work will be presented.

MORBIDITY REPORT

Diseases	Dec. '46	Nov. '46	Dec. '45	Most Cases Reported From
Diphtheria	13	19	31	Black Hawk, Clinton, Fremont
Scarlet Fever	117	119	138	Delaware, Polk, Wapello
Typhoid Fever	0	2	0	
Smallpox	1	0	1	Plymouth
Measles	28	33	19	Allamakee, Appanoose, Warren
Whooping Cough	91	76	28	Boone, Bremer, Floyd, Hancock
Brucellosis	43	*173	0	Boone, Bremer, Wapello, Warren
Chickenpox	388	384	159	Boone, Dubuque, Woodbury
German Measles	2	5	4	Boone, Lee
Influenza	2	1	649	Lyon, Osceola
Malaria	4	2	28	Black Hawk, Boone, Jefferson, Poweshiek
Meningitis Meningococcus	2	7	14	Hardin, Woodbury
Mumps	88	54	79	Black Hawk, Delaware, Woodbury
Pneumonia	11	19	*521	Black Hawk, Mahaska
Poliomyelitis	13	96	6	Kossuth, Plymouth, Scattered
Tuberculosis	50	63	34	For the state
Gonorrhea	114	142	182	For the state
Syphilis	133	126	115	For the state

*Delayed Reports.

The JOURNAL of the

Iowa State Medical Society

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No. 2

Make Iowa Fly Free in '47

At a recent meeting of the State Fly Control Conference preparations were made for an extensive campaign in fly control. The annoyance of these pests to livestock and human beings and their rôle in the spread of many serious diseases to both man and animals is well known. Fly control campaigns carried out in Ames, Manchester, Maquoketa, Traer, Dysart, and Winthrop during 1946 proved so successful that a statewide campaign could well "make Iowa fly free in '47."

Active community groups, including service clubs, local health and medical associations, Parent-Teacher Associations, and local farm organizations should be approached regarding the promotion of this campaign. Their responsibilities include: (1) distributing information; (2) obtaining financial support; (3) locating, repairing, and distributing equipment and materials; (4) directing actual control work; and (5) evaluating results.

The county extension director should be urged to take the initiative in organizing the rural campaign and act in an advisory capacity to urban groups. Local newspaper editors should be enlisted to distribute information. District sanitary engineers and local health officers should be consulted regarding garbage collection and disposal, outdoor toilets, sewage and dumps. Local bankers should be enlisted to obtain financial support. Machinists and druggists can do much in the repairing and distributing of equipment and materials. The actual control work should be under

the direction of a physician, druggist, veterinarian, police chief, fire chief, teacher, or a similar responsible person. The local health officer is the logical person to evaluate results.

The effectiveness of a fly control campaign will be the greatest where the largest possible number of people participate. This is a true community program in which citizens are assigned a definite job and given public recognition for doing that job well.

Legal Status of Hospital Residents

In response to a request, the Honorable John M. Rankin, Attorney General of Iowa, recently furnished the following opinion regarding the legal status of hospital resident physicians: "We are of the opinion that resident physicians or interns must obtain a license to practice medicine and surgery in this state in order to be lawfully qualified to carry on the activities mentioned, insofar as such activities constitute the practice of medicine and surgery."

Furthermore, the State Board of Medical Examiners has made a ruling that all residents in all institutions in Iowa comply with the law and secure license by reciprocity or examination on or before July 1, 1947. By this action the Board does not construe the interpretation of this ruling as applying to special residents who are of foreign birth and not citizens of the United States. The State Board of Medical Examiners further passed a ruling that a letter be sent to all institutions and hospitals of Iowa, calling their attention to the recent ruling of the Attorney General with reference to residents and interns regarding licensure and requesting the superintendent of such institutions to so inform residents and interns, and if they are not licensed to make application for same. The next examination for license will be held in Iowa City March 17, 18, and 19.

In addition, it might prove of interest that a resident physician should be urged to apply for coverage by malpractice insurance. Once these physicians have obtained their state licenses and have become members of their county medical societies, they are eligible to obtain such insurance.

Psychiatry at the Crossroads

At a recent staff meeting at the hospitals of the University of Minnesota, Dr. Donald W. Hastings presented the concept that a graduating student should take with him as he leaves the medical school four points, namely: (1) patients are people; (2) people have problems; (3) problems can lead to anxiety, and anxiety can lead to illness,

illness which can mimic or produce symptoms similar to organic disease: (4) the doctor can be of specific assistance in helping these sick people if he knows a little bit in the way of psychiatric technics.

It is becoming increasingly apparent that the practice of psychiatry in the future will more and more rely upon the general practitioner and internist and to a lesser degree on the psychiatrically trained specialist. In other words, the doctor who has specialized in psychiatry will be occupied in teaching, research, and the clinical management of those patients who are beyond the scope and training of the general practitioner or internist.

Psychiatry at the present is being influenced by the shifting character of the postwar era. Previously there has been a tendency to divorce itself from medicine with the result that psychiatry has appeared as an isolated specialty practiced within insane asylums. This attitude is largely a thing of the past, and the psychiatrist of present times is returning to the realization that he is also a physician first and foremost. Most of the diseases of the mind remain indistinct as to etiology. Fortunately in relation to the psychoneuroses and the psychosomatic illnesses, which are the most common of the emotional disorders, a good deal is understood when one compares the obscure etiologies of dementia praecox, manic depressive disease and other of the major psychiatric illnesses.

The general practitioner who is usually well versed in the emotional background of his patient possesses a distinct advantage in recognizing the transition from a neurosis to a frank psychiatric illness. This is particularly true with reference to the returned service man. Many veterans who accepted a medical discharge from the service on the basis of a psychoneurosis are now finding it difficult to obtain insurance, disability benefits, and other of the privileges accruing to their fellow veterans. Many service men are harassed by housing problems, employment, marital relationships, and a host of vexing details which lead ultimately to anxiety states. Psychiatrists may well borrow from the methods and technics of the general practitioner in their application to the large uncharted areas of psychiatric disorder.

Recent Board Licentiatees

In cooperation with the State Board of Medical Examiners, a list of those physicians who have been granted a license to practice in Iowa will henceforth be published monthly in this JOURNAL.

During the past month the following physicians have been granted licenses:

Carl W. Ahl, Coleraine, Minn.
Robert M. Bartel, Council Bluffs, Iowa.
Ralph E. Brundige, Akron, Iowa.
Thomas L. Carr, Iowa City, Iowa.
Robert M. Collison, Cedar Rapids, Iowa.
Hellen J. Derby, Iowa City, Iowa.
Ada Bier Dunner, Norristown, Pa.
Edward M. Eneboe, Canton, S. Dak.
John J. Eustermann, Lewiston, Minn.
Edward R. Gann, Sigourney, Iowa.
James D. Glynn, Lancaster, Wis.
L. C. Hallendorf, Rochester, Minn.
John E. Hartsaw, Sigourney, Iowa.
Ralph Hogshead, Jr., Ames, Iowa.
John F. Koester, Davenport, Iowa.
Robert H. Kooiker, Milford, Iowa.
Arthur G. Lueck, Des Moines, Iowa.
Carl C. Magdsick, Charles City, Iowa.
Richard C. Porter, Des Moines, Iowa.
Warren H. Randall, St. Paul, Minn.
Edward J. Ridenour, Waterloo, Iowa.
Hugh F. Rives, Dubuque, Iowa.
Jesse H. Roth, Tucson, Ariz.
H. E. Rudersdorf, Sloan, Iowa.
Ross P. Rusk, Jr., Cleveland, Ohio.
Donald E. Schell, Wooster, Ohio.
Edward D. Schwade, Milwaukee, Wis.
A. H. R. Stueland, Mt. Tabor, N. J.
T. F. Thornton, Jr., Waterloo, Iowa.
Constance M. Turner, Iowa City, Iowa.

The Rich Report

In the following pages is given the summary of the Rich report and the action taken upon it by the House of Delegates. The recommendations of the Rich Associates are in small type: the recommendations of the reference committee which studied it are in larger type. The report of the reference committee was approved by the House of Delegates.

Executive Session—Tuesday Afternoon

The House reconvened in Executive Session at 3:30 p. m., with the Speaker, Dr. Roy W. Fouts, presiding.

Report of the Committee of the Whole

On motion of Dr. Edwin S. Hamilton, chairman, seconded by several and carried, the report of the Committee of the Whole, which recommended adoption of the following portions of the report of the Special Committee on Executive Session for Consideration of the Rich Report, was adopted:

In opening a detailed discussion of them any recommendations involved in this report, your committee wishes to dwell first on the conclusion reached by Mr. Rich—offered, not as a recommendation but rather as an accepted mechanism for the activities of the American Medical Association—as stated in

the last paragraph on page 1 of his report, "To separate distinctly the functions of scientific interpretation, medical economics and social medicine, and the direction of public relations." While recognizing the advantage of creating such several agencies, whether as committees, bureaus or councils, yet because of the overlapping and intermingling of the interests and activities of these several departments and for the sake of clearcut, now confusing, public relations and for the proper preservation, at all times, of the well considered professional viewpoint, it would seem essential to designate one officer or one small committee or council with authority to act in the capacity of interdepartmental supervisorship.

I. Proceeding to a detailed consideration of specific recommendation, your committee approves of recommendations No. 1 and No. 2 on page 2 of the Rich Report, reading as follows:

1. We *Recommend*, therefore, that the Association seek every possible opportunity and means to describe and dramatize the progress of scientific medicine, what it promises to mean to mankind, and especially all that the Association has done and is doing to advance this progress.

2. We *Recommend Further* that this vital assignment be entrusted to the editor of *The Journal* who, in our judgment, is on all counts best equipped to present this story with a degree of authority and with a brilliance which will appeal to the general public.

The suggestion is made, however, that in addition to a presentation of the purely scientific accomplishments of the profession the story of the development of organized medicine in America be made known. The approaching Centennial of the American Medical Association affords an excellent opportunity for acquainting the public with our story. This might well be accomplished by a series of articles published in *Hygeia* and in other periodicals depicting, chronologically, the more dramatic and significant steps in the history and development of organized medicine in America, such as is now appearing in the *Journal of the American Medical Association*. Beginning with the Medical Society of New Jersey, organized in 1766 for the purpose of improving the practice of medicine and inspired by a need for bettering the care of disabled veterans of the French and Indian War, and so all down the line, in the formation of city, county, state and national organizations, the motivating factors have been betterment in the quality of medicine and the welfare and protection of the public. These facts well speak for themselves without elaboration.

II. Your committee cannot agree fully with the preamble on page 3 of the Rich Report leading up to recommendations concerning *Hygeia*. During war years, the circulation of this periodical was largely determined by the amount of paper available. Its circulation could have been doubled at any time. Your committee is somewhat at a loss to understand the implications in the criticism of the commercial methods of promotions used. It is fully in accord with the proposition that *Hygeia* should be vitalized into the most powerful medium of approach to the reading public. It should not only carry pertinent scientific facts suitable for public consumption but should also acquaint the laity with the "Doctor

Story" and present the profession's side of all controversial matters. This magazine would afford an excellent medium for the presentation of the history of the development of organized medicine alluded to in the foregoing section. With these thoughts in mind, we approve of recommendation No. 3 on page 3 of the Rich Report, reading:

3. We *Recommend*, therefore, that the editor be requested to devote particular attention to the urgent task of vitalizing *Hygeia*, and that he be authorized to obtain a fully competent managing editor with adequate editorial and art assistants.

This committee does not approve of recommendation No. 4 on page 3 of the Rich Report, which reads:

4. We *Recommend Further* that the editor-in-chief be requested, each year, to reserve exclusively for *Hygeia* an appropriate number of his most vivid and popular articles.

III. In common with Mr. Rich, your committee recognizes the fact that the average busy physician may be a poor business man and perhaps an irregular economist, but he has done and is doing a splendid job for the American people. One advantage which the practicing physician has over the trained economic theorist is a first hand knowledge of people of all classes and a sympathetic understanding of their needs, both medical and socioeconomic. Our Bureau of Medical Economics up to the present has confined itself to the study and analysis of every conceivable phase of medical economics. It should continue to be headed by the best trained man available. With this suggestion your committee approves recommendation No. 5 on page 4 of the Rich Report which reads as follows:

5. We *Recommend* that in order to obtain a truly superior person of the highest caliber, he be offered not only direction of the Bureau but also responsibility for procuring and developing the material for a Department of Medical Economics and Social Medicine in *The Journal* and in *Hygeia*.

IV. With regard to the section on "Diverse Opinion," we are fully in accord with the proposition that all responsible minority groups should be afforded the privilege of giving public expression of their views. However, every member has had experience in his own county or state organization with the crack pot chronic objector, the mouthpiece of no group, who makes a persistent nuisance of himself. The editor should be permitted to use his discretion in denying publicity to such persons. Your committee feels that diverse economic opinions should be limited to the *Journal of the American Medical Association* and other journals for professional reading and not put in lay publications. With these exceptions, your committee approves of recommendation No. 6 on page 5 of the Rich Report, which reads:

6. We *Recommend*, therefore, that the economist appointed to the position mentioned shall give opportunity in his department of *The Journal* and of *Hygeia* for the expression of diverse viewpoints. This, we are convinced, will create a dynamic atmosphere which will go far to arouse the active interest of the many doctors whose lethargy has rightly been a matter of grave concern.

V. Your committee is fully in accord with the need of a more positive type of public relations program. It likewise recognizes the advantage of trained directorship in the development of such a program and it understands that a director has been appointed.

From past experience your committee knows that

publicity experts, in their enthusiasm to attract the attention of the reading public, have been known to produce misleading headlines and tincture truth with fiction to the detriment of the dignity of the profession. With no intent to hamper this new officer, your committee nevertheless urges that all publicity and all projects promulgated by him be approved by the general manager before published or undertaken. If this stipulation is made mandatory, your committee approves recommendations Nos. 7 and 8, page 6 of the Rich Report which read:

7. We *Recommend*, therefore, that the General Manager be authorized to appoint an executive assistant in charge of coordinating and servicing the public relations activities of all officers, councils, bureaus, divisions and departments of the Association.

8. We *Recommend* further that this new appointee have the responsibility of developing, with the full support of the Board, ways and means of greatly broadening the system of interpretation of the Association to the public on matters other than scientific medicine.

Three Essential Goals: On pages 8 and 9 of the Rich Report, the subject of Three Essential Goals provides no points of difference. This committee is in agreement with the views expressed, which read as follows:

Viewing the field of medical economics and social medicine from a public relations standpoint, there are three basic tasks—three essential goals, they might better be called. Each must be held constantly in mind by the Association.

Find the Truth: The first of these goals is for the Association to convince the public that it is seeking the truth as honestly in the economic and social aspects of medicine as it is in the scientific. And it must recognize that in these fields, to which it is less accustomed, there is as yet no proven truth. To put it otherwise, truth here, as in medicine, must be found in the clinic. But here the clinic is the public. And in this clinic the patients are not prostrate—they are active, vigorous and articulate. And they have various views about what they want to happen to them when they do become prostrate, as they know they will sooner or later.

Moreover it must constantly be remembered that patients in this clinic *control* the public relations of the American Medical Association. Neither the American Medical Association itself nor the wisest public relations counsel can control its public relations. But confident reliance may be placed in a most substantial, even remarkable, improvement in its public relations if the American Medical Association will give a fair hearing week in and week out, year in and year out, to those who with sincerity and intelligence are inclined to other viewpoints or who believe there are neglected developments and issues which need attention. Only by full discussion can the right answers be found.

Put the People First: Study alone will not suffice. The second essential goal is to show the public that the American Medical Association is actually following up the truth which it finds by doing everything in its power to bring medical care to all the people. As one nationally known public relations practitioner put it, the American Medical Association must prove "that it is out fighting for medical care that the public can afford."

This means that the Association must deal first and foremost with the needs of the public; second, with the welfare of the physician. In other words, its actions must be the organized embodiment of the first statement in the "Principles of Medical Ethics":

"A profession has for its prime object the service it can render to humanity: reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession an individual assumes an obligation to conduct himself in accordance with its ideals."

Become Adequate: Finally the performance of the Association must be adequate. As one writer has recently said with reference to the National Health Program adopted February 14, 1946, "The American Medical Association has submitted itself to the test of accomplishment."

National Physicians Committee for the Extension of Medical Service: This committee recognized: 1. That each member of the American Medical Association is primarily a citizen with the inalienable right to join any organization. 2. That the House of Delegates has on two previous occasions endorsed and commended the work of the National Physicians Committee for the Extension of Medical Service. 3.

In line with the new program in the process of accomplishment, this committee feels that the American Medical Association should and must do its own public relations and legislative work. This implies no lack of appreciation of similar work done and to be done by other organizations devoted to the best interests of the public and organized medicine. 4. In view of the controversial character of the Rich Report and in view of lack of documentary evidence relating to the National Physicians Committee for the Extension of Medical Service, this committee recommends further study of this portion of the report.

Lay Participation in Voluntary Plans: In many of the plans, there is lay participation. Few, if any, have total medical control and as long as we are providing medical service, control should be vested in the hands of the physicians. With that in view, this committee approves recommendation No. 10 on page 12 of the Rich Report, which reads:

10. We *Recommend*, therefore, that the relationship of lay participation to the successful development and operation of voluntary health insurance plans be the subject of objective study and that, unless there shall prove to be conclusive evidence to the contrary, the present requirements for total medical control be revised promptly.

In the Sherburne resolution, reference is made to the Council on Medical Service and Public Relations. Since these two functions are now divided, this recommendation should apply to the duties of the executive assistant to the general manager.

Provided that the work of the executive assistant first meets with the approval of the general manager, your committee approves of recommendation No. 11, page 15 of the Rich Report, which reads:

11. We *Recommend*, therefore, that the secretary and general manager be requested to implement as fully as possible the resolution on modern medical public relations introduced by Dr. C. C. Sherburne of Ohio, and adopted by the House of Delegates last December. In doing so, however, the work should be performed through the executive assistant called for above.

The committee approves parts 1 and 2 of recommendation No. 12 on page 16 of the Rich Report, which read:

12. We *Recommend*, therefore,

1. That each council and bureau be requested to identify in its field all legitimate organizations having cognate interests; then to develop in cooperation with the executive assistant, for Board approval, specific plans for establishing practical co-operative relationships with them.

2. That the execution of the approved programs be under the guidance of the general manager's executive assistant.

BUREAU OF HEALTH EDUCATION

Your committee has studied with care that portion of the Rich Report pertaining to the Bureau of Health Education. It agrees with Rich Associates that here the Association possesses an instrumentality of great potential importance in public relations. While the achievements of this Bureau in many respects has been impressive, many helpful suggestions have been forthcoming. Your committee feels that this activity should be stimulated and its good work furthered. With this in mind, adequate personnel should be supplied and suitable junior executives created to assume responsibilities for the various phases of work. This has already been accomplished in the appointment of added personnel of high caliber (Dr. Smiley and Mr. Hein).

The report points out that the work of the Bureau of Health Education falls in two distinct and important parts; one is the health education of the public and the other is the school program. Each is equally important and neither can be neglected by the American Medical Association. Each should have the benefit of strong lay counsel. This report recommends that two advisory councils be appointed by the Board of Trustees to deal, respectively, with popular health programs and with school health programs. While your committee feels that definite responsibility for each of these two activities should be delegated to certain executives of the Bureau of Health Education, it questions the wisdom of more councils and greater bureaus. Your committee feels that the Director of the Bureau of Health Education should be responsible for the activities of this Bureau to the Board of Trustees. Policies of the Bureau are to be determined by the House of Delegates while the Board of Trustees acts as interim agent. Further cooperation with various educational bodies in order to cultivate the school health program is to be stimulated. This has been done in the past by the Bureau of Health Education.

With the substitution of the word "committees" for the word "councils," this committee approves recommendation No. 13 on page 18, of the Rich Report, reading:

13. We *Recommend*, therefore, that taking into consideration nominations by the director of the Bureau and the executive assistant to the general manager, the Board of Trustees appoint two advisory councils dealing respectively with school health programs and with popular health programs.

This committee approves recommendation No. 14 on page 19 of the Rich Report, which reads:

14. We *Recommend*, therefore:

1. The establishment of a "Health and School Section" of the Bureau.

2. The appointment of an assistant director to be in charge of this section.

Good progress has been made in the field of popular health education by our Association in the past; fertile fields lie ahead. Through various publications, releases and radio presentations immeasurable good will and education have been disseminated, a truly great work of public relations which could not but react favorably for our profession. Your committee recommends continued expansion in this field of activity.

With the addition of the words "Associate or" in front of Assistant Director, the committee approves recommendation No. 15 on page 20 of the Rich Report, reading:

15. We *Recommend*, therefore, the appointment of an assistant director to be in charge of liaison with voluntary professional and lay organizations concerned with popular (as distinguished from school) health education.

Your committee feels that great good in health education can be accomplished through medical societies and voluntary medical service plans. Good progress has already been made in the larger medical societies, especially where paid executive secretaries are available. These avenues should be utilized further and the good start already made continued. The voluntary service plans offer an excep-

tional opportunity to contact the public and this means should be developed to the utmost. Adequate liaison with both the medical societies and the voluntary medical service plans should be maintained and the Bureau should be ready to serve as voluntary consultant in the development and execution of their health education programs.

When the Bureau of Health Education develops to the point where the necessity for a field secretary is shown, the committee feels that recommendation No. 16 on page 21 of the Rich Report should be approved. This recommendation reads:

16. We *Recommend* the appointment of a field secretary to serve the voluntary plans as a consultant in the development and execution of their health education program.

The publications of the Bureau of Health Education were reviewed and suggestions were forthcoming. They were criticized from the standpoint of (1) out of date material; (2) extent of treatment; (3) method of treatment, and (4) format and make-up. It was suggested that the present out of date material be reviewed and if there is still a need for a particular publication it should be brought up to date, or if the need no longer exists the stock of such articles be scrapped. In this your committee thoroughly agrees; it cannot miss this opportunity to say that many articles which today are live material, tomorrow may be obsolete. This can best be exemplified by the rapid change brought about in treatment by introduction of the sulfa drugs and penicillin. Nevertheless, these suggestions should receive our earnest consideration. Your committee believes all publications should be periodically brought up to date, and when an article is found out of date it should be withdrawn from distribution. This is especially true of those containing inadequate material or those which by reason of format, illustrations and makeup are unattractive.

In reference to recommendation No. 17, page 22 of the Rich Report, your committee approves part 1 with the substitution of the words "withdrawn from distribution" for "scrapped."

Your committee approves part 2 of the recommendation with the addition that "a new list of classified health publications be prepared."

In reference to part 3 of the recommendation, your committee finds that this has already been done and therefore recommends this portion of the report.

In reference to part 4, your committee finds that this is already in force and, therefore, approves this portion of the recommendation. Recommendation No. 17, pages 22 and 23 of the Rich Report reads:

17. We *Recommend*, therefore, that:

1. The present stock of out-of-date pamphlets be immediately scrapped.

2. No further use be made of the present list of "Health Publications of the Bureau."

3. The Bureau be required to have each of its publications periodically re-examined as to scientific content by competent authorities.

4. Whenever a publication is found to be out of date it be withdrawn from distribution, and be rewritten if the subject is still important.

Your committee would like to suggest the great possibility for public relations through the greater utilization of the constituent state and component

county societies. These societies are on the firing line, so to speak, and through them a great distribution of literature to the public can be accomplished.

Your committee approves recommendation No. 18 on page 23 of the Rich Report, which reads

18. We *Recommend*, therefore, that to insure adequacy of treatment the indicated pamphlets be rewritten in consultation with a competent lay writer.

The committee feels that the need suggested in recommendation No. 19, page 24 of the Rich Report, is one calling for further investigation before approval. This recommendation reads:

19. We *Find Need* for popular editing and professional styling.

Circulation: Reverting to the subject of the circulation of the Bureau publications

We *Find Need* for (1) a wholly new catalogue or advertising leaflet, (2) separate advertising sheets for various groups of publications, (3) development of depository and distribution arrangements with state and county societies and (4) overall distribution and sale promotion by appropriate adaptations of proven business methods.

The report recognized the need and broadening influence of radio programs (recommendation No. 20, page 26 of the Rich Report) and the committee concurs in the extent to which the recognition should be used in further study. Recommendation No. 20 reads:

20. We *Find Need* for competent assistance to aid in conceiving program ideas, procure and work with the best available script writers wherever they may be, obtain network sustaining time and inclusion in commercial time, supervise production, and advise state and county societies regarding the procurement and use of local time.

COUNCIL ON MEDICAL SERVICE

The name of this Council was changed at the San Francisco Session and its new duties clearly outlined by changes in the By-Laws.

In reference to recommendation No. 21 on page 28, part 1, of the Rich Report the change in the name of the council is already an accomplished fact, according to the By-Laws, under the name of Council on Medical Service and, therefore, the committee approves the recommendation.

Regional Conference and Unorganized States. One of the functions of this Council, Chapter IX, Section 4, By-Laws, shall be "(6) to develop and assist committees on medical service and public relations originating within the constituent associations and component societies of the American Medical Association."

Conferences may be held on invitations from constituent associations or component societies. The composition of these conferences should be determined at the local level. The American Medical Association should encourage these conferences and cooperate with the local constituent association and component societies.

The News Letter and Present Deficiencies. Your committee suggests that the excellent News Letter of this Council be further improved as facilities permit and that it be given wider dissemination. It suggests further that the Council study and recommend other facilities for transmitting news to the profession and general public.

BUREAU OF MEDICAL ECONOMICS

Your committee sees no advantage to be gained by the proposed change in the name of this Bureau.

This Bureau should, in our opinion, concern itself with the science of economics in its broadest sense with particular reference to the practice of medicine and public health. Its findings will, of course, be available to all.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

In the opinion of your committee "it would be most unwise for the Association to become as 'legislation conscious' as Mr. Rich would have it do. It is an organization with scientific objectives and it should remain so."

The committee disapproves of recommendation No. 22, page 33, in the Rich Report, and in its stead recommends that the Bureau of Legal Medicine and Legislation be prepared to assist in the development of legislation in accordance with the principles established by the House of Delegates. Recommendation No. 22 reads:

22. We *Recommend*, therefore, that the Bureau of Legal Medicine and Legislation be requested and be enabled systematically to prepare legislation based on the findings of the Bureau of Medical Economics and Social Medicine and on the experience of the Council for the Extension of Medical Care; this draft legislation to be submitted to the House of Delegates for its action.

The committee concurs in the need for the availability of virtually the same services as those mentioned for the Bureau of Medical Economics. Recommendation No. 23, page 34 of the Rich Report, reads:

23. We therefore *Find Need* for the availability of virtually the same services as those mentioned for the Bureau of Medical Economics and Social Medicine.

COUNCIL ON INDUSTRIAL HEALTH

Your committee is in agreement with the general recommendation concerning this council. It feels that common public relations with this council and other related councils and bureaus should be stressed. More attention should be paid to industrial and consumer groups in view of the recent developments in connection with the United Mine Workers Health Fund. This will obviously place extra work on this council necessitating additional experienced help. Finally, it believes that the work of this council should be commended and that this council should be implemented with sufficient funds and staff to broaden its work with labor, management and consumer groups.

The committee approves recommendation No. 24 on page 35 of the Rich Report reading:

24. We *Recommend* that in view of the great public relations contributions which can be made by this Council every possible encouragement and facility be given to the conduct of its work.

The committee concurs in the findings that there should be services supplied similar to those required by the Council on Medical Service, contained in recommendation No. 25, page 35 of the Rich Report, which reads:

25. And we *Find Need* for supplying services similar to those required by the Council for the Extension of Medical Care.

SCIENTIFIC COUNCILS AND BUREAUS

Each of the scientific councils and bureaus has an opportunity to improve our public relations. On account of the diversified activities and interests of

the councils and the overlapping work of some of them, your committee would like to emphasize again the absolute necessity of having an executive assistant to the general manager responsible for the public relations and publicity of all of these agencies.

FUNDAMENTAL PRINCIPLES

In any large organization, it is a fundamental principle that coordination of all activities of such an organization is absolutely essential. Your committee recommends the appointment of a capable and experienced executive assistant to the general manager whose duty it shall be to coordinate and service all public relations activities of the Association. To do this, the executive assistant must be in attendance or have an experienced reporter in attendance at all important board, council and committee meetings and thereby acquire and coordinate the information necessary to carry out the duties of his office.

The committee concurs in the suggestions of this report in reference to *A*, *B* and *C* of recommendation No. 26, page 37 of the Rich Report, which reads:

Fundamental Principles: To build up desirable public relations there are three essentials for the American Medical Association as for any other organization: positive and constructive policies; effective, adequate and coordinated action; balanced and efficient promotional and interpretive facilities.

It will be recalled that the recommendation on page 6, approved by the executive committee, calls for an executive assistant to the general manager charged with *coordinating and servicing* all public relations activities of the Association. He must, therefore:

A. Have the right to attend all Board, Council and Committee meetings and, when he considers it necessary, to express opinion regarding public relations aspects of their deliberations.

B. Have means of receiving, and channels for disseminating, intelligence calculated to achieve coordination of all actions that hold public relations implications.

C. Have direct responsibility and adequate provisions for the promotional and interpretive (publicity) assistants recommended below.

The committee approves recommendation No. 27, page 38 of the Rich Report, with the understanding that the attendance of the executive assistant or his reporter be subject to the approval of the general manager. Recommendation No. 27 reads:

27. We *Recommend*, therefore, that the Board of Trustees at its next meeting take the indicated action with respect to its own meetings and formally request all councils and committees to do likewise.

Requirement B of this report necessitates that the executive assistant be informed through the general manager of the problems that arise in the constituent state associations so that he can more properly formulate a positive program concerning the problems of extension of medical care and health legislation. Finally, the recommendation concerning a "house organ" should be implemented, which would enable the American Medical Association to present to its membership the full picture of the ever changing problems of medical care both pro and con, and that in addition authoritative points of view on current stands of the American Medical Association should be published for the benefit of constituent state medical associations. The committee, therefore, approves recommendation No. 28 on page 39 of the Rich Report with the foregoing changes. That recommendation reads:

28. We *Recommend*, therefore

1. That a national "house organ" be established.

2. That the executive assistant be enabled to engage a competent reporter to handle this publication under his supervision.

3. That the executive assistant be responsible for procuring and developing the material for the "Organization Section" in *The Journal* and for notes of this character in *Hygein*.

PUBLICITY

In reference to recommendation No. 29 on page 40 of the Rich Report this committee approves. That recommendation reads:

29. We *Recommend*, therefore,

1. That the present editor of the clip sheet be transferred to the office of the executive assistant with the understanding, however, that his writing on scientific subjects and his contacts with writers on scientific matters be subject to the approval of the editor of *The Journal*.

2. That the present "Bureau of Public Relations" be discontinued.

PAMPHLET PRODUCTION

The committee approves recommendation No. 30, page 40 of the Rich Report reading:

30. We *Recommend*, therefore, that the executive assistant be enabled to engage a competent person to conduct a centralized service of pamphlet production.

RADIO

The committee approves recommendation No. 31, page 41 of the Rich Report that provision be made for a junior radio specialist on the staff, backed by highly experienced professional counsel, if, after study, it is justified by need and cost. Recommendation No. 31 reads:

31. We *Recommend*, therefore, that provision be made for a junior radio specialist on the staff, backed by highly experienced professional counsel.

VISUAL TECHNICS

Your committee is certain that close cooperation with the National Education Association is and can continue to be a powerful adjunct in public medical education.

The committee does not approve of recommendation No. 32 on page 42 as it is written, but substitutes "We recommend, therefore, that all possible uses of visual technics be utilized backed by the advice of professional counsel."

PROMOTION

In reference to recommendation No. 33, on page 43 of the Rich Report, the committee approves, subject to cost and demonstrated need, the recommendation reading:

33. We *Recommend*, therefore, that the executive assistant be enabled to engage a competent promotional specialist.

SPEAKER'S BUREAU

In reference to the Speaker's Bureau on page 43, recommendation No. 34, the committee recommends that the Speaker's Bureau should be not only initiated but activated and utilized to its fullest capacity. The recommendation reads:

34. Speaker's Bureau: Since the need for a Speaker's Bureau has already been seen by the Trustees, and since we fully concur, no recommendation to initiate such a facility is needed. We ought to express our judgment, however, that this should never become a mere group of itinerant professional speakers. It should be essentially a national service bureau for the needs of national bodies and for the speaker's services which, it is to be hoped, will be operated by a growing number of constituent societies. It should actively identify up-to-the-minute speakers on medical topics and find appropriate places for them to speak.

CONTINUING COUNSEL

The committee recommends, therefore, that competent counsel be retained as advisor to the executive assistant and that all matters pertaining to public relations and publicity emanating from the counsel should be cleared through the office of the general manager. Your committee fully recommends that

(Continued on page 85)

NEWS NOTES

from the

Committee on Medical Service and Public Relations

A Statement of Policy

The Committee on Medical Service and Public Relations has come to encompass many activities, all of them of great interest to the members of the Iowa State Medical Society. In the interest of public relations, which must necessarily start with professional relations, the Committee seeks some means for letting the doctors of Iowa know what is being done. Many plans were considered, but it seemed most feasible to utilize the JOURNAL of this Society.

Hereafter your Committee hopes each month to have a page devoted to a report by one or more of its members on current activities. The new veterans' program will pose many questions, and Dr. Roy C. Gutch, whose responsibility it is, will try to answer them through this medium.

Each member of the Committee has been assigned certain fields of interest, and each member will render a report at least once during the year. Look for this page; read it, and send us your suggestions for improving it.

Fred Sternagel, M.D., Chairman

The Veterans Program Starts

It is with a great deal of pleasure that your Committee on Medical Service and Public Relations announces the start of the veterans' program for home care on February 1. At first the program will be limited to examinations, but within a short time it will be expanded to include treatment as well.

Iowa Medical Service will be the agent for the doctors of the state in handling the details of the program. Authorizations from the Veterans Administration will be issued through Iowa Medical Service; examination blanks will be returned by the doctor to Iowa Medical Service; and bills will be paid by that agency after receipt of funds from the Veterans Administration. Additional personnel has been hired and the Veterans Administration has promised to lend an advisor in the first days of organization.

All doctors in Iowa received a letter September 9 inviting them to participate in this plan. About fifteen hundred responded. The list is not closed, however, and any physician who wishes to join should notify Iowa Medical Service.

The first card asked doctors to specify their special field of practice. It has now been found desirable to know what laboratory services each doctor

can provide for the veteran, and a second card has been sent to procure that information.

Full instructions for the program will be mailed to all doctors before February 1. We are glad to say the examination blanks have been simplified.

Work on this program started about a year ago. The full and subcommittee have spent a great deal of time trying to evolve a workable plan of the most benefit to veterans. Progress has been slow, and for this we apologize. We hope that as the procedure gets under way, it may run smoothly and have the same kind of support as we have received this past year from the doctors of Iowa.

R. C. Gutch, M.D.

The Physician's Part in Vocational Rehabilitation

The Iowa Rehabilitation Division informs us it is about to send detailed information concerning its services to the doctors of Iowa. This information will deal with the possibilities of *civilian* rehabilitation as distinguished from that of veterans and should not be confused with the veterans' program.

Vocational rehabilitation has been an existing force for twenty-six years. It is not a service for alleviating distress, although that occurs, but is based on cold economic facts. Figures cited by the Division are illuminating. The report for the biennium July 1, 1944, to June 30, 1946, indicates that the annual earnings of the 612 persons rehabilitated amounted to \$926,534.00, while the total cost for the biennium from federal and state funds amounted to \$200,782.96. That is a return of 450 per cent on the investment for the two year period, but as a matter of fact, the earnings do not stop there but continue throughout the life of the rehabilitated individual. He has been changed from a potential financial burden on his family or the state to a self-supporting individual who can earn his own living and pay his own portion of the taxes.

In the last fiscal year, only four persons were referred to the Division by physicians. It is probable that every physician in Iowa has as patients four persons in need of some type of vocational

rehabilitation. Reliable estimates state there are about seven persons in every thousand of the population who are vocationally handicapped by physical impairments. As the physician sees them in his practice, he should keep in mind the possibility of referring to the Rehabilitation Division those who might be benefited.

The patient may not need medical and surgical treatment; sometimes he only requires training and job finding. The Division is prepared to aid these persons by determining what is needed to make them self-supporting. Its responsibility begins when the case is first reported and ends when the individual is satisfactorily employed. No services can be provided at rehabilitation expense except when they are expected to increase the employability of the individual regardless of pathetic circumstances.

Services include preliminary investigation, physical and vocational diagnosis, vocational counseling and determination of suitable job, vocational training, medical and surgical treatment (including hospitalization) to remove or reduce the vocational handicap, collateral therapies, and placement and follow-up on the job.

This sounds technical, but it must be remembered that not all the above services will be needed for any one individual. Every physically handicapped person presents a number of distinct problems, the solution of which requires understanding, patience and ingenuity.

Funds come from federal and state sources; administration is in the hands of the Iowa Division; and complete harmony exists between the Division and the central office of your State Society. A part-time medical consultant has been employed for the past several years to pass upon all medical policies and matters.

Certainly this is a program which merits the support of every citizen of our state, and it is a program in which the physician is uniquely fitted to assist. As physicians we believe in the integrity of the individual; we are anxious that each person should enjoy the maximum possible in good health and physical condition. As citizens we believe in the right of the individual to gainful and useful employment, and to the full enjoyment and responsibilities of good citizenship. As physician and citizen, we need to be aware of the problem; we need a "seeing" eye when we find these persons in our practice; and we need to make them aware of the opportunity which exists for rehabilitation.

Fred Sternagel, M.D.

RICH REPORT

(Continued from page 83)

until the program is established and evaluated no long term contracts be entered into with reference to the employment of counsel or other lay personnel recommended by this report.

APPENDIX A OF THE RICH REPORT

This material involves editorial, art, scientific, management and publicity departments. In view of the steps already taken to reorganize and fortify some of these departments and the steps taken to inaugurate a new public relations department, your committee does not feel justified in doing more than recommending that these suggestions be called to the attention of proper executives to take such steps as they find necesasry.

The committee approves appendix A of the Rich Report which evaluates the Health Publications of the American Medical Association.

APPENDIX B OF THE RICH REPORT

Your committee has read with interest the criticism of this work, and again recommends that these criticisms be called to the attention of the proper authorities for such action as is necessary.

The committee approves appendix B of the Rich Report evaluating transcriptions submitted for audition.

APPENDIX C OF THE RICH REPORT

This is a field of activity which is so controversial and so costly, and one in which competition with many other types of program is so keen, that this committee recommends that this whole problem needs further investigation before committing the American Medical Association to excessive expenditures.

The committee approves appendix C of the Rich Report offering suggestions regarding expanded use of the radio.

In conclusion your committee wishes to state that the complete implementation of this report will cost an estimated minimum of \$300,000 annually, and feels that this delay of six months before taking final action on the Rich Report was warranted. However, the work of this committee has been, to a large extent, rendered superfluous by the fact that the Board of Trustees initiated some of the recommendations of the Rich Report prior to the Rich investigation and many of the recommendations prior to the receipt of this committee's report for final action by the House of Delegates.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p. m.
WSUI—Thursdays at 2:45 p. m.

- February 5- 6 Common Contagious Diseases of Children
Charlotte Fisk, M.D.
- February 12-13 Behavior Problems of Children
- February 19-20 Colitis
H. A. Tolliver, M.D.
- February 26-27 Mastoiditis

VETERANS ADMINISTRATION

RESIDENCY PROGRAM, VETERANS ADMINISTRATION

(Conclusion of article which appeared in the January number)

Maintenance of Standards

A Resident Review Board will be established for each hospital having a residency program. This board will be made up of the following individuals: one clinical director, one chief of service, one attending physician, one laboratory chief and one member of the Dean's Committee. The Resident Review Board will meet at such times as necessary to pass on new applicants recommended by the Dean's Committee and to evaluate the progress of all incumbent residents at least once a year. The Board will recommend to the branch medical director any change of status of an incumbent as provided below:

1. The Board may recommend that the incumbent resident: (a) be continued in residency training; (b) be advised to apply for a position in the Department of Medicine and Surgery in other than a resident status; or (c) be separated from the Department of Medicine and Surgery.

2. The Board will recommend change of grade of incumbent residents who will continue residency training. This change of grade will be based on their status toward fulfilling the requirements for qualification in the Specialty Boards of their choice.

Quality of Teaching

The program will be planned to provide whatever training is necessary to meet the qualifications of the American Specialty Boards. The quality of training will be such that will enable the Residents to successfully meet examinations for certification by the American Specialty Boards.

Where neuropsychiatric training is taking place, the following may apply: a curriculum, detailing clinical training in hospitals and clinics by consultants and attendings will include incidental lectures, demonstrations, and conferences. When the subcommittee for neuropsychiatry elects to do so, training may include courses in basic sciences, formal didactic courses and laboratory exercises. Provision should be made for affiliated training as detailed below.

Pay of Residents

Up to Jan. 3, 1949, all doctors appointed as residents who have rendered active service as doctors in the armed forces of the United States in World War II, because of their experience and the fact that their services will prove more valuable to the Veterans Administration, will be paid \$3,300 per annum. If they live on the station, the cost of quarters, subsistence and laundry will be deducted. No extra amount is payable in addition to the regular per annum date, regardless of the number of hours of service rendered by a resident during a day or by reason of working on a legal holiday.

Affiliated Training

Whenever the facilities for training at field stations are such that the requirements for the Specialty Board of the resident's choice cannot be completely filled, the administrator may, on the recommendation of the local Resident Review Board, authorize the resident to secure that portion of the Specialty Board requirements at a nonveterans' hospital or school recommended by the Resident Review Board. This authorization may only be given provided that the time, as determined by the Resident Review Board, spent away from the field stations will not exceed approximately 50 per cent of the time of employment, and the character of the duties of the resident will be of such a nature that the medical education of the resident will be furthered in accord with the policy for promoting efficient care for veterans. Because of the peculiar needs in the case of residents in neuropsychiatry, an expansion of this policy may be made to the extent that the training may be taken at schools of medicine and their affiliated institutions, provided that approximately 50 per cent of the time of the resident will be occupied in supervised treatment of veterans, whether in hospitals or clinics of the Veterans Administration, when available, or in other hospitals or clinics where the treatment of veterans is under the supervision of the Veterans Administration. During this affiliated service, the resident will continue his status in the Department of Medicine and Surgery with respect to pay, time in grade and all other conditions and consideration of employment.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. MARION H. BRINKER, Jefferson

President-elect—MRS. FRED MOORE, Des Moines

Secretary—MRS. CHARLES A. NICOLL, Panora

Treasurer—MRS. HENRY G. DECKER, 2908 Woodland, Des Moines

PRE-CONVENTION NOTES

The 1947 Woman's Auxiliary convention committee met January 13 at the Hotel Savery, Des Moines. Mrs. M. H. Brinker, state president, presided over the meeting which was attended by Mrs. Fred Moore, president-elect; Mrs. F. A. Springer, president of Polk County Auxiliary; and Mrs. K. M. Chapler, press chairman.

The 1947 convention will be held at Hotel Savery, April 17 and 18. There will be a twelve o'clock luncheon on April 16 for the State Board, which is composed of state officers, chairmen of standing committees, and county presidents. A business session will follow. Morning meetings on April 17 and 18 will begin promptly at 9:30.

Every effort is being made to provide a stimulating convention. Lengthy formal reports will be eliminated. It is hoped that the national president, Mrs. Jesse Hamer of Arizona, will be present. Several outstanding speakers will appear on the program. There will be addresses on the state Auxiliary projects of "Cancer Control" and "Handicapped Children," as well as on other medical topics of interest.

Due to the fact that hotel accommodations are at a premium, it would be wise for those who expect to remain in Des Moines for the entire session to secure reservations early.

NATIONAL CONFERENCE REPORT

Your president attended the conference of Presidents and Presidents-elect at the Continental Hotel, Chicago, December 11 and 12. A representative from every state was present.

The morning session of December 11 was opened promptly by our national president, Mrs. Jesse D. Hamer of Phoenix, Ariz., who extended greetings. Since the national president-elect is chairman of this conference, Mrs. Eustace A. Allen of Atlanta, Ga., presided. Although she was on crutches as a result of a fractured leg, she presided over the sessions in a very efficient manner.

Mrs. Luther H. Kice of New York, chairman of legislation, presented Dr. J. J. Holloway, Director of the Bureau of Legal Medicine, who summarized all past legislation and gave a timely talk on prospective legislation in the Eightieth session of Congress.

At the noon luncheon Dr. Miller of Chicago and Dr. W. W. Bauer, Director of the Bureau of Health Education, both gave talks. Dr. Miller talked on

"Cancer Control," bringing us up to date on the latest developments in this field.

Dr. Bauer's talk on health education was a challenge to Auxiliary members to make themselves an informed group on this subject, again pointing out that doctors' wives can be very effective in public relations work. He gave us names of speakers whom we might contact and also told us about a series of new radio broadcasts now available for local stations on "Medicine Serves America."

Dr. Morris Fishbein also talked during the afternoon, giving us detailed information about the forthcoming Atlantic City convention June 9 to 13. This is the Centennial Session for the A.M.A. and months of preparation are going into plans to make this an outstanding event in medical history. This will also be the twenty-fifth year for the Auxiliary.

Mrs. David Allman of Atlantic City, N. J., general chairman of the convention, described plans for the Auxiliary meetings, all of which will be held at the Hadden Hall Hotel.

On Thursday morning before the opening of the morning session, Mrs. Leo J. Schaefer of Salina, Kan., organization chairman for the north central region, gave a breakfast for all representatives of her district and outlined plans for our work and reports for the Atlantic City convention.

During the regular session president's reports were given, and chairmen of national committees finished their reports and gave outlines of work for state auxiliaries.

At the luncheon Thursday noon Dr. H. H. Shoulders talked on the basic philosophy behind the medical profession, urging Auxiliary members to indoctrinate themselves with the ideal and aims of the profession. Dr. Rollo K. Packard talked on postwar planning, pointing out that the medical profession should be prepared to take proper leadership in its own field. He showed how Auxiliary members might become an informed group ready to help the medical profession.

The Conference closed Thursday afternoon, and after its adjournment several of the national chairmen conducted round table discussions with the representatives about different phases of their work.

In all, it was an inspiring and thought-provoking conference—truly, a working conference, and much good should result in our Auxiliary work.

Mrs. M. H. Brinker, President

CONVENTION ADDRESSES

HARRISON H. SHOULDERS, M.D.

President, American Medical Association, 1946-1947

The Woman's Auxiliary is a rather young auxiliary to a very old organization. I might say you are the youthful bride of a centenarian. We must never forget that. I think as we grow older we use our senses properly, we do accumulate some knowledge of how things should be done and we acquire a real sense of values.

My mind turns to the time when the formation of this organization was being considered and to the discussion which took place. There were those who contended that you should convert the auxiliary into a tea party, delightful but not useful. There were others, and that opinion did prevail, that you would not only add color to our annual meetings, and no one will say that has not been accomplished, but that you would contribute a great deal more. It was just prior to that, in 1920, when women were gaining the vote in this country. The importance of women in the political life of the nation became evident and many women were keenly aware of the influence they might exert. There were, of course, numerous women's organizations, such as music and garden clubs, etc. They were created for cultural and entertainment value and some of these were headed by women who saw the possibility of gathering together all of these influences and molding them into a political organization. Some weeks ago a woman appeared before a conference committee of the Congress and said she represented twenty million women.

It was assumed in the beginning that the wives of doctors have a medical point of view. I do not know whether this is entirely true or not. I doubt sometimes if many have ever read the constitution and by-laws of the American Medical Association and its code of ethical principles. If you present a medical point of view effectively, I believe you must know it. It is very important for the Woman's Auxiliary to know the philosophy of the American Medical Association. It is also important to infiltrate yourselves into other organizations of women so that when the occasion arises you can present the medical point of view. These organizations are being misled. It is your job to get in and lead them in the proper channels. That is the first task, as I see it, for the Auxiliary and I think there is an urgent need for you to focus your thoughts on that particular activity at this moment.

Another point I would like to make is that we must draw some very fine distinctions on public welfare and be able to discern the deceptive "welfare." There is not a law on the statute books that does not end with the expression "the public welfare requiring it." Welfare has come to have a very indefinite meaning. To some it means nothing more or less than the delivery of a check or some service by a government agent to an individual. Nothing else is welfare. Whereas the highest welfare, as we pursue this thought, is freedom. To me it contains all

the elements that give flavor and purpose to living. Food and shelter are fundamental but after all is said and done, there are other factors to living. That fact was pointed out nearly two thousand years ago. There is also a lot of deception going on about charity. If you watch a little while you will see that many proponents of the so-called charity movements get from someone else that which is given and they do the giving. By such maneuvers some of the administrators of charity regard themselves as good samaritans. The fact is the good samaritan always uses his own money.

We must come back to the thought, and we must reiterate it, that you are an auxiliary to a parent organization. You must acquaint yourselves not only with the background and philosophy but with the recent decisions and actions of the parent organization.

We are approaching the time when the number of government employees is assuming dangerous proportions because of the political influence they can exert through themselves, their families and dependents. When the percentage of government employees becomes large enough, and that has almost been reached now, our freedom will be gone. This fact was pointed out by the professor of political economy at Harvard University many years ago. The government employees become regimented into a political unit. They have a vested interest in a government job. We can, therefore, lose our freedom by the simple process of multiplying government bureaus and agencies. They seem always to grow and expand, and under present conditions each one seems to have a propaganda department, also financed by the taxpayers.

Our purpose is welfare and progress under freedom. There can be no welfare worthy of the name when freedom is destroyed.—*The Bulletin*, August, 1946.

ROGER I. LEE, M.D.

Past President, American Medical Association

During the war everybody said that after the war everything, except human nature, was going to change but that human nature would be the same. I want to speak about the relationship of our government and ourselves and to point out how that has been one of the greatest changes we have seen in our day.

The government has put its nose into our affairs. During the war we suffered regimentation gladly, were proud to make sacrifices and give up a substantial part of the freedom we had acquired all of these years to win the great victory over the force of evil. We are still prepared, in this terrible post-war period, to make other sacrifices so that the people of the world can live in decent comfort. But we want to be certain that we will get back some of these liberties. It is one thing to win a victory; it is another to have lost your liberty and freedom in the process of gaining a great victory.

The government likely enough is going to take

more interest in our affairs. For example, two illustrations of the benevolent interest of the government in our welfare are demonstrated in the Hill Burton Hospital Bill, which the American Medical Association has endorsed in principle, and the Science Foundation Bill, which is also entirely benevolent and should be a great boon to the medical profession and medical science. I am here to warn you, however, that if we get to depending too much on the government to build our hospitals and to do our scientific research, very soon the government will be doing our practicing for us.

At the moment the so-called Wagner-Murray-Dingell Bill seems to be "dragging anchor" and not progressing very well but at the same time there are other forces at work than the Wagner-Murray-Dingell Bill.

I simply want to point out to you that the government is going to take an increased amount of interest in our affairs, not only personal but professional, and that we must keep a watchful eye on the government's activities because these things, even though benevolent in intent, may be very serious and malignant in their execution.

It was over six hundred years ago that a Scottish Parliament in 1334 made the following declaration:

"It is not for riches, glory or honor that we fight but we fight for that liberty which no good man loses but with his life."—*The Bulletin*, August, 1946.

NOMINATING COMMITTEE

At the request of the state president, Mrs. M. H. Brinker, we are reprinting the names of the members of the nominating committee. They are: Mrs. S. S. Westly, chairman; Mrs. W. S. Reiley, Mrs. J. C. Decker, Mrs. W. A. Seidler, and Mrs. E. T. Warren.

SUGGESTION

All members of the Woman's Auxiliary are urged to read the article, "Socialized Medicine—Bad Medicine for You," by Michael Wright which appeared in the January issue of *Better Homes and Gardens*.

POSTGRADUATE COURSE IN RADIOLOGY

One hundred radiologists will be selected to attend the postgraduate courses in radiology to be conducted March 30 through April 4 in Philadelphia by the American College of Radiology. Preference will be given to radiologists who served in World War II. Second preference will be given to qualified applicants who were unable to obtain admission to last year's course in Philadelphia. The course is sponsored jointly by the American College of Radiology and the Philadelphia Roentgen Ray Society.

Because of the popularity of the course given in Philadelphia last year, many radiologists were unable

to be enrolled. Numerous requests for a second similar course have prompted the committee to sponsor it again this year.

There are two main considerations which have impelled the committee to undertake this program. Although national and local scientific societies in the specialty of radiology have maintained a consistently high standard in their regular meetings, numerous inquiries have indicated an obvious need for intensive courses of a more academic nature. Also, veteran medical officers have been felt to be in need of an intensive review before returning to private practice. Many of these men were denied the opportunity for normal clinical practice or study which would keep them abreast of the rapid progress in the specialty of radiology.

Some of the subjects to be studied are: certain neoplastic and inflammatory diseases, carcinoma of the head and neck, dosage calculation and tumor sensitivity in radiation therapy, carcinoma of the breast, blood and hemopoietic diseases, carcinoma of the genital and urinary tract, benign and malignant diseases of the skin.

TWENTIETH ANNUAL MEETING NATIONAL CONFERENCE ON MEDICAL SERVICE

Sunday, February 9, 1947

Palmer House, Chicago, Illinois

PROGRAM

- 9:00 Registration, Red Lacquer Room, fourth floor.
 - 9:30 Call to order and Address of the President—Cleon A. Nafe, Indianapolis.
 - 9:50 The Eightieth Congress—Joseph S. Lawrence, Washington, D. C.
 - 10:10 The Operation of Public Law 725: The National Hospital Construction Act—Herman E. Hilleboe, United States Public Health Service, Washington, D. C.
 - 10:40 Discussion period.
 - 11:00 Veterans' Care: Where Do We Go From Here?—Paul B. Magnuson, Veterans Administration, Washington, D. C.
 - 11:30 Medical Cooperatives—Mr. L. S. Kleinschmidt, Chicago.
 - 11:50 Developments in the Council on Medical Service—Mr. Thomas A. Hendricks, Chicago.
 - 12:15 Luncheon. Speaker of national prominence to be announced.
 - 2:15 Open forum: Modern Influences in Medical Practice: Undergraduate Medical Education; Trends Towards Specialization; General Practitioners in Hospitals; Hospital Staff Organization.
- Moderator: Creighton Barker, New Haven.
 Duncan W. Clark, Associate Dean, Long Island College of Medicine.
 B. R. Kirklin, Secretary, Advisory Board for Medical Specialties, Rochester, Minnesota.
 Leo G. Christian, Vice Chief of Staff, St. Lawrence Hospital, Lansing, Michigan.
 Thomas P. Murdock, Chief of Staff, Meriden Hospital, Meriden, Connecticut.

ATTENTION

Members-at-large are asked to send their annual dues of \$1.00 directly to Mrs. Henry G. Decker, 2908 Woodland, Des Moines, Iowa.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

ALLERGY IN PRACTICE—By Samuel M. Feinberg, M.D., Associate Professor of Medicine and Chief of the Division of Allergy, Northwestern University Medical School; President, American Association for the Study of Allergy, 1942-1943; with the collaboration of OREN C. DURHAM, Chief Botanist, Abbott Laboratories, and CARL A. DRAGSTEDT, Ph.D., M.D., Professor and Chairman of the Department of Pharmacology, Northwestern University Medical School. The Year Book Publishers, Inc., Chicago; Second, Revised Edition, 1946. Price, \$10.50.

THE CHEST, A HANDBOOK OF ROENTGEN DIAGNOSIS—By Leo G. Rigler, M.D., Professor and Chief, Department of Radiology, University of Minnesota. The Year Book Publishers, Inc., Chicago, 1946. Price, \$6.50.

DIAGNOSIS AND TREATMENT OF MENSTRUAL DISORDERS AND STERILITY—By Charles Mazer, M.D., F.A.C.S., Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania; Gynecologist to the Mount Sinai Hospital, Philadelphia; and S. LEON ISRAEL, M.D., F.A.C.S., Instructor in Gynecology and Obstetrics, School of Medicine, University of Pennsylvania; Associate Gynecologist to the Mount Sinai Hospital, Philadelphia. Second edition. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York, 1946. Price, \$7.50.

THE DIFFERENTIAL DIAGNOSIS OF JAUNDICE—By Leon Schiff, Ph.D., M.D., Associate Professor of Medicine, Department of Internal Medicine, University of Cincinnati Medical School; Director, Gastric Laboratory, Cincinnati General Hospital. The Year Book Publishers, Inc., Chicago, 1946. Price, \$5.50.

INTRACRANIAL COMPLICATIONS OF EAR, NOSE AND THROAT INFECTIONS—By Hans Brunner, M.D., Associate Professor of Otolaryngology, University of Illinois College of Medicine, Chicago. The Year Book Publishers, Inc., Chicago, 1946. Price, \$6.75.

MEDICAL USES OF SOAP, A Symposium—By Rudolf L. Baer, M.D.; Irvin H. Blank, Ph.D.; Theodore Cornbleet, M.D.; Morris Fishbein, M.D.; G. Thomas Halberstadt, B.S., Ch.E.; Lester Hollander, M.D.; Edwin P. Jordan, M.D.; Daniel J. Kooyman, Ph.D.; C. Guy Lane, M.D.; Carey McCord, M.D.; Marion B. Sulzberger, M.D. J. B. Lippincott Company, Philadelphia, 1946. Price, \$3.

MUSCLE TESTING, Techniques of Manual Examination—By Lucille Daniels, M.D., Director and Associate Professor of Physical Therapy, Stanford University; MARIAN WILLIAMS, M.A., Assistant Professor of Physical Therapy, Stanford University; CATHERINE WORTHINGHAM, M.A., Director of Professional Education, The National Foundation for Infantile Paralysis, Inc. W. B. Saunders Company, Philadelphia, 1946. Price, \$2.50.

PENICILLIN, ITS PRACTICAL APPLICATION—By Sir Alexander Fleming, F.R.C.S., F.R.C.P., F.R.S., Nobel Prize Award, Discoverer of Penicillin; Professor of Bacteriology, University of London, St. Mary's Hospital; and twenty-eight contributors in special fields of medicine.

PRACTICAL MALARIOLOGY—Prepared under the auspices of the Division of Medical Sciences of the National Research Council, by PAUL F. RUSSELL, M.D., M.P.H., Colonel, M. O. A. U. S., Parasitology Division, the Army Medical School, Field Staff, International Health Division, Rockefeller Foundation (on leave); LUTHER S. WEST, Ph.D.; Head of Biology Department, Northern Michigan College of Education, Major, Sn.C., A. U. S. (Reserve); formerly Entomologist, Parasitology Division, Army Medical School; REGINALD D. MANWELL, Sc.D., Professor of Zoology, Syracuse University, New York; formerly Captain Sn.C., A.U.S., Protozoology Section, Parasitology Division, Army Medical School. Foreword by RAYMOND B. FOSDIK, President of The Rockefeller Foundation, W. B. Saunders Company, Philadelphia, 1946. Price, \$8.

R K G RHEOCARDIOGRAPHY, A method of Circulation's Investigation and Diagnosis in Circular Motion; From the Nerve-Clinic of the University of Vienna Chief Prof. Dr. Otto Potzl; Information of the Developments Laboratory of the Clinic from the Physiological Institute of the University of Vienna; Leader Dr. Wolfgang Holzer from the Pharmacological Institute of the University of Vienna; Leader Dr. Wolfgang Holzer—By W. HOLZER, K. POLZER, and A. MARKO. Authorized English Translation by Mrs. Emma M. Kreidl, Vienna, former secretary of the A. M. A. of Vienna. Wilhelm Maudrich, Publisher, Vienna, Austria, 1946.

SEX EDUCATION: A Guide for Parents, Teachers and Youth Leaders—By Cyril Bibby, M.A., M.Sc., F.L.S. Education Officer to the Central Council of Health Education; Senior Lecturer at the College of St. Mark and St. John, London; sometime scholar of Queen's College, Cambridge. Emerson Books, Inc., New York, 1946. Price, \$2.50.

SEX PROBLEMS OF THE RETURNED VETERAN—By Howard Kitching, M.D., Foreword by Ernest R. Groves, Professor of Sociology, University of North Carolina. Emerson Books, Inc., New York, 1946. Price, \$1.50.

BOOK REVIEWS

THE CHEST, A HANDBOOK OF ROENTGEN DIAGNOSIS

By Leo G. Rigler, M.D., Professor and Chief, Department of Radiology, University of Minnesota. The Year Book Publishers, Inc., Chicago, 1946. Price, \$6.50.

This volume is one of a series of handbooks. In general it follows the atlas form of presentation, the material being condensed but amply illustrated with excellent cuts. The volume is divided into methods of examination, the normal chest with the anatomic variation, and artefacts, physiology of respiration, disease of the bronchi, lungs, mediastinum, and pleura. A large section is devoted to roentgen interpretation and differential diagnosis. The field of chest pathology is adequately covered.

This should be a valuable handbook for students and roentgenologists and can be highly recommended. It is surprisingly complete for its size.

F. A. S.

MEDICAL USES OF SOAP

A Symposium—By Rudolf L. Baer, M.D.; Irving H. Blank, Ph.D.; Theodore Cornbleet, M.D.; Morris Fishbein, M.D.; G. Thomas Halberstadt, B.S., Ch.E.; Lester Hollander, M.D.; Edwin P. Jordan, M.D.; Daniel J. Kooyman, Ph.D.; C. Guy Lane, M.D.; Carey McCord, M.D.; Marion B. Sulzberger, M.D. Second printing, J. B. Lippincott Company, Philadelphia, 1946. Price, \$3.

This book is a comprehensive and somewhat repetitious monograph contributed by ten authors on soap. It discusses the manufacture of soap and detergents, their effect upon normal and diseased skin, the effects of soaps used in shaving and shampooing, and the uses of soap for the surgeon and the industrial worker.

Probably most physicians would not enjoy such a lengthy discussion of soap, but it could be profit-

ably read in its entirety by those interested in cutaneous diseases and in part by industrial and general surgeons.

R. J. S.

SEX EDUCATION

A Guide for Parents, Teachers and Youth Leaders

By Cyril Bibby, M.A., M.Sc., F.L.S. Education Officer to the Central Council of Health Education; Senior Lecturer at the College of St. Mark and St. John, London; sometime scholar of Queen's College, Cambridge. Emerson Books, Inc., New York, 1946. Price, \$2.50.

This volume will be welcomed by parents, teachers, and youth leaders who are called upon to deal intelligently with sex education. The book has been popular in England. It contains specific answers to the usual questions presented by children, conveniently arranged under subheadings to cover all phases of sex education. Specimen lectures are included in the book, which is further provided with an excellent bibliography.

E. M. G.

MUSCLE TESTING; TECHNIQUES OF MANUAL EXAMINATION

By Lucille Daniels, M.D., Director and Associate Professor of Physical Therapy, Stanford University; MARIAN WILLIAMS, M.A., Assistant Professor of Physical Therapy, Stanford University; CATHERINE WORTHINGHAM, M.A., Director of Professional Education, The National Foundation for Infantile Paralysis, Inc. W. B. Saunders Company, Philadelphia, 1946. Price, \$2.50.

This manual is of particular value to medical students and physiotherapists. A technic for an examination of muscle function and the proper evaluation of muscle strength is presented in a manner readily understood due to each test. This book should standardize proper ratings of muscle strength and is welcomed as a valuable adjunct for those working with muscle dysfunction.

E. M. G.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Board of Trustees
January 12, 1947

The Board of Trustees of the Iowa State Medical Society met in the central office Sunday morning, January 12, with the following persons present: Trustees—John I. Marker, Lee R. Woodward and Walter A. Sternberg; president—Robert L. Parker, president-elect—Harold A. Spilman; secretary—John C. Parsons; chairman of the Legislative Committee—J. W. Billingsley; and editor—E. M. George.

Minutes were read and approved; bills were authorized; the budget for 1947 was considered and set up; publications committee matters were discussed.

The meeting adjourned at 11 a. m.

Meeting of the Committee on Medical Service and Public Relations

January 12, 1947

The Committee on Medical Service and Public Relations met in the central office Sunday morning, January 12, at 11 a. m. The following persons were present: Fred Sternagel, chairman; R. D. Bernard, Martin I. Olsen, E. E. Shaw, D. C. Conzett, R. C. Gutch and Charles T. Maxwell of the Committee; the president, president-elect, and secretary; trustees Marker and Woodward; J. W. Billingsley of the Legislative Committee; Channing Smith, Harold J. McCoy and Mr. Wieland of the State Department of Social Welfare; and Mr. Willis Grant of the Vocational Rehabilitation Division.

Mr. Wieland discussed the old age assistance problem, and the committee stated its wishes toward decentralization and postpayment; Mr. Grant presented the vocational rehabilitation program; minutes were read and approved; Dr. Gutch reported on the veterans' care program; Dr. Conzett reported on his work on the mental health division; Dr. Bernard reported on national legislation; and Dr. Shaw told of the present status of the hospital survey committee, and what had been done for rural health improvement.

The Committee voted to prepare a monthly page for the Journal containing a report from one or more members of current interest to the profession; it also voted a recommendation that the Board of Publication consider the possibility of moving the editorial section to first position in the JOURNAL.

The meeting adjourned at 2 p. m.

EXAMINATIONS FOR THE AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, INC.

The next written examination and review of case histories (Part I) for all candidates to the American Board of Obstetrics and Gynecology, Inc., will be held in various cities of the United States and Canada on Feb. 7, 1947.

Arrangements will be made so far as is possible for candidates to take the Part I examination (written paper and submission of case records) at places convenient for them. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination to be held June 1-7, 1947, at Pittsburgh, Pennsylvania. Notice of the exact time and place of the Part I and Part II examinations will be sent all candidates well in advance of the examination date.

For further information and application blanks address Paul Titus, M.D., Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

SOCIETY PROCEEDINGS

MEETINGS

Adair County

The Adair County Medical Society held its annual election of officers December 20. Elected were Dr. A. J. Gantz, president, Dr. A. S. Bowers, secretary-treasurer; Dr. R. E. Wiley, delegate; Dr. L. H. Ahrens, alternate delegate; and Dr. Ralph DeCicco, censor. The doctors' wives were guests at a dinner at Hotel Greenfield prior to the meeting.

Audubon County

The Audubon County Medical Society met in Audubon recently. Officers elected were Dr. P. Soe of Kimballton, president; Dr. P. E. James of Elk Horn, vice president; and Dr. H. K. Merselis of Audubon, secretary. Uniform medical fees were established.

Black Hawk County

Dr. J. F. Gerken was named president-elect of the Black Hawk County Medical Society at the group's annual meeting in Waterloo December 17. The 1947 officers are Dr. H. O. Gardner, president; Dr. Paul O'Keefe, vice president; Dr. C. A. Waterbury, secretary; and Dr. George C. Murphy, treasurer, all of Waterloo.

The January meeting was held at the Russell-Lamson Hotel on the twenty-first. Following dinner Dr. Lee Forest Hill of Des Moines spoke on "Common Problems in Pediatric Practice."

Boone County

The Boone County Medical Society elected Dr. John C. Herman president at its annual meeting. Serving as vice president will be Dr. W. H. Longworth; as secretary-treasurer, Dr. H. C. Scharnweber; delegate, Dr. Ben T. Whitaker; alternate delegate, Dr. A. B. Deering; board of censors, Dr. R. L. Wicks; and board of trustees, Dr. R. E. Gunn.

Buchanan County

Dr. James Barrett was elected president of the Buchanan County Medical Society at its meeting in the Club Cafe, Independence, December 26. Dr. Paul Leehey was named vice president.

Calhoun County

The Calhoun County Medical Society met in Rockwell City December 19, where they heard Verne C. Pangborn of Des Moines, director of the Iowa state hospital survey, explain the method of allocating funds for local hospitals. Dr. James B. Mahoney of the Council Bluffs clinic addressed the group on psychosomatic medicine.

Carroll County

The Carroll County Medical Society elected Dr. A. F. Smith of Manning president; Dr. T. H. Van Camp of Breda, vice president; and Dr. R. J. Ferlic of Carroll, secretary-treasurer. At the joint meeting of the society members and the staff of St. Anthony hospital Dr. W. L. McConkie discussed "Virus Infection of the Eye."

Cerro Gordo County

Dr. Ralph E. Smiley was elected president of the Cerro Gordo County Medical Society at the meeting of the group in December. Other officers elected for 1947 were Dr. Draper L. Long, vice president; Dr. James W. Lannon, secretary; Dr. Harry G. Marinos, treasurer; Dr. Carroll O. Adams, delegate; and Dr. Harold W. Morgan, alternate delegate. Dr. Lawrence J. Halpin of Cedar Rapids spoke on "Management of Bronchial Asthma."

Crawford County

The Crawford County Medical Society met in Denison recently for the purpose of reorganization and election of officers. Those to hold office the coming year are: Dr. C. L. Sievers, Denison, president; Dr. R. A. Huber, Charter Oak, vice president; Dr. C. Dudley Miller, Denison, secretary-treasurer; Dr. Clair L. LeMar, Dow City, delegate; Dr. James V. Yackley, Denison, alternate; Dr. A. H. Grau, Dr. C. H. Fee, and Dr. C. L. Sievers, all of Denison, board of censors; Dr. A. F. Johnson, Manilla, Dr. R. A. Huber, Charter Oak, and Dr. R. P. Plimpton, Denison, rules committee.

Emmet County

Dr. A. I. Reed was elected president of the Emmet County Medical Society at its meeting December 16. Other officers elected were: Dr. Hugo Lindholm of Armstrong, vice president; Dr. L. W. Loving, secretary-treasurer; Dr. G. B. Johnston, delegate; Dr. C. Smith Kirkegaard, alternate; and Dr. L. E. Collins, censor. Dr. C. E. Birney was voted to life membership in the society.

Grundy County

At the meeting of the Grundy County Medical Society held December 12 in the courthouse, Dr. H. L. Mol was elected president. Other doctors to hold office are: Dr. W. O. McDowell, vice president; Dr. Varina DesMarias, secretary-treasurer; Dr. J. E. Rose, delegate; and Dr. H. V. Kahler, alternate.

Henry County

About twenty doctors from neighboring counties were guests at the meeting of the Henry County

Medical Society at the Harlan Hotel, Mount Pleasant, December 20. Dr. Willis M. Fowler, professor of medicine at the University of Iowa, spoke on "Hemorrhagic Diseases." At the business meeting, the group re-elected Dr. J. Stewart Jackson president, Dr. J. T. Connaughey, vice president, and Dr. Bernhard B. Gloeckler, secretary-treasurer. The organization approved a tuberculosis survey program to be conducted by the State Department of Health and the Iowa Tuberculosis Association.

Iowa County

Members of the Iowa County Medical Society met for a dinner and the annual election at the Doose Hotel, Marengo, December 12. Officers of the society were re-elected as follows: Dr. F. C. Schadt, Williamsburg, president; Dr. E. L. Hollis, Marengo, vice president; Dr. I. J. Sinn, Williamsburg, secretary-treasurer; Dr. C. F. Watts, Marengo, delegate; and Dr. T. D. Clark, Victor, alternate.

Johnson County

The Johnson County Medical Society met in the Jefferson Hotel January 8 for a dinner and business session. Dr. Bernard Donnelly of the Department of Surgery, State University of Iowa College of Medicine, discussed retroperitoneal tumors. Dr. Frank R. Peterson, professor of surgery, opened the discussion, followed by Dr. E. D. Warner, professor of pathology, who discussed the pathology of the tumors.

Linn County

Dr. William James Gardner, chief of the neurosurgical division, Cleveland clinic, and Dr. Roscoe J. Kennedy, assistant chief of the ophthalmological division of the same clinic, spoke at the Linn County Medical Society meeting held in the Roosevelt Hotel, Cedar Rapids, December 12.

Lyon County

The Lyon County Medical Society met December 4 at the VanderWilt Hospital, Rock Rapids, to elect new officers. Those named were Dr. A. C. Wubena, president, and Dr. S. H. Cook, secretary-treasurer.

Mahaska County

Annual election of the Mahaska County Medical Society officers was held following a dinner at the Hotel Perkins dining room January 8. Those chosen were: Dr. G. W. Bennett, president; Dr. Kenneth Lemon, vice president; Dr. Howard Bos, secretary; and Dr. E. B. Wilcox, treasurer.

Marshall County

The Marshall County Medical Society met at the Congregational Church in Marshalltown January 7. Dr. R. C. Hardin of the Department of Medicine at the University Hospitals, Iowa City, spoke on "Water Balance."

Monona County

The Monona County Medical Society members met with the Onawa Kiwanis Club December 23 at the Christian Church in Onawa. The program, presented by the doctors, concerned postwar planning for a county or municipal hospital for Monona County.

Muscatine County

Dr. L. H. Whitmer of Wilton was chosen head of the Muscatine County Medical Society at the final business meeting of the year held December 19 at Hotel Muscatine in Muscatine. Other officers elected were Dr. K. E. Wilcox, vice president; and Dr. D. C. Alftine, secretary-treasurer. Subjects discussed were the proposed licensure of practical nurses in Iowa and the child spacing program sponsored by the Iowa League of Planned Parenthood. A motion picture on food chemistry was shown at the close of the meeting.

Polk County

The annual meeting of the Polk County Medical Society was held at Hotel Fort Des Moines, Des Moines, January 15. Following dinner, officers were elected as follows: Dr. Lester D. Powell, president-elect; Dr. Harold C. Bone, secretary-treasurer; Dr. Diedrich J. Haines, trustee; Dr. E. Parish Lovejoy, councilor-at-large; Dr. Douglas N. Gibson, Dr. Lee F. Hill, Dr. Harold J. McCoy, Dr. Martin I. Olsen, and Dr. Joseph B. Priestley, delegates; Dr. Harold C. Black, Dr. William R. Hornaday, Dr. Christian B. Luginbuhl, Dr. Fred Sternagel, and Dr. Clifford W. Losh, alternate delegates. Bishop Gerald T. Bergan addressed the group following the election.

Pottawattamie County

Dr. C. V. Edwards of Council Bluffs was elected president of the Pottawattamie County Medical Society at the group's meeting at Hotel Chieftain, Council Bluffs, December 17. Others chosen were: Dr. G. V. Caughlan vice president and delegate; Dr. Joseph G. Kruml, secretary-treasurer; Dr. R. M. Collins, alternate delegate; Dr. D. C. Hankey, board of censors.

Poweshiek County

The Poweshiek County Medical Society elected the following officers at its annual meeting December 10: Dr. Delano Wilcox, Malcom, president; Dr. T. V. Niemann, Brooklyn, vice president; Dr. J. T. Padgham, Grinnell, treasurer; Dr. C. E. Harris, Grinnell, secretary; Dr. S. D. Porter, Grinnell, delegate; and Dr. John R. Parish, Grinnell, alternate.

Scott County

Dr. Raymond A. Berger discussed "Problems in Roentgen Diagnosis" at the meeting of the Scott County Medical Society held January 7 at the Lend-a-Hand Club, Davenport. A six o'clock dinner was served.

Sioux Valley Medical Society

The Sioux Valley Medical Society held its annual meeting at the Martin Hotel, Sioux City, January 28, 29, and 30. Among the speakers presented were Dr. William S. Middleton of the University of Wisconsin Medical School, Dr. Franklin G. Ebaugh of the University of Colorado, Dr. J. M. Waugh of the Mayo Clinic, Dr. Herbert C. Miller of the University of Kansas, Dr. Dean M. Lierle of the State University of Iowa, Dr. Orin M. Lofthus of the University of South Dakota, and Dr. C. J. Ehrenger of the University of Minnesota.

Taylor County

The Taylor County Medical Society met January 16 at Hotel Lenox, Lenox. Following dinner, Dr. William R. Hamsa of Omaha, Neb., spoke on "Mechanical Disabilities of the Foot," and Dr. Paul T. Cash of the same city spoke on "Convulsive Disorders and Their Treatment."

Union County

Dr. C. B. Roe of Afton was elected president of the Union County Medical Society at its annual meeting held January 8 at the Greater Community Hospital in Creston. Others voted to office were Dr. A. S. Beatty, vice president; Dr. Carl Sampson, secretary-treasurer; Dr. C. C. Rambo, delegate, and Dr. Howard Beatty, alternate.

Webster County

The Webster County Medical Society met at the Wahnonsa Hotel, Fort Dodge, December 19. Dr. Charles J. Baker was re-elected president; Dr. Walter R. Fieseler was named vice president, and Dr. Marvin W. Burleson, secretary-treasurer. Re-elected delegate to the State Society meeting was Dr. E. M. Kersten and named alternate delegate was Dr. A. A. Schultz.

Winneshiek County

The Winneshiek County Medical Society held its annual business meeting and election at the Winneshiek Hotel, Decorah, December 12. At the dinner meeting Dr. R. N. Svendsen was re-elected to the office of president, Dr. R. M. Dahlquist, vice president; and Dr. H. H. Ennis, secretary-treasurer.

Woodbury County

Dr. R. T. Rohwer was chosen president-elect of the Woodbury County Medical Society at a meeting at the Martin Hotel, December 11. Dr. E. M. Honke was elected vice president and Dr. R. C. Mugan was re-elected secretary-treasurer. Others named were Dr. E. E. Morgan, delegate; Dr. William M. Krigsten, alternate; and Dr. William E. Cody and Dr. Clifford R. Watkin, censors.

Wright County

The Wright County Medical Society met December 19 at the New Home Cafe in Clarion, following which

a business meeting was held at the office of Dr. R. D. Bernard. Those elected to office were: Dr. C. A. Aagesen of Dows, president; Dr. E. M. Smith, Eagle Grove, vice president; and Dr. J. R. Christensen, Eagle Grove, secretary-treasurer.

PERSONALS

Dr. Carl W. Ahl has become associated with Dr. F. E. Giles and Dr. P. A. Nierling in the practice of medicine in Cresco. He is also setting up an office at Protivin, where he will spend three days per week. A graduate of the University of Minnesota College of Medicine, he served four years in the Army Air Forces in World War II.

Dr. James F. Bishop recently opened offices in Davenport, limiting his practice to proctology. He has just completed a postgraduate training course.

Dr. Frederick Boes has returned to Davenport from Magdeberg, Germany, where, for the past thirty-nine years he has been stationed in St. Mary's Hospital as gynecologist. He practiced in Davenport from 1898 to 1907.

Dr. Warren C. Bogle has opened offices for the practice of medicine in Center Point. He was released from the navy in July, 1946, following a year of service, and for ten weeks he has carried on the practice of Dr. D. H. Newland of Belle Plaine, who has been on vacation.

Dr. Kenneth M. Brinkhous, associate professor of pathology at the University Hospitals, resigned November 30 to become professor and head of the department of pathology of the University of North Carolina at Chapel Hill. He had been a member of the pathology department since 1932 and served in the army five years.

Dr. Everett D. Christensen and his wife, Dr. Eunice Christensen, have announced their intention to begin the practice of medicine and general surgery in Spencer March 1. Both are graduates of the College of Medical Evangelists, Los Angeles, Calif., with the class of 1936. They practiced in Grand Mound, Iowa, from 1938 to 1942 at which time he entered service. They recently completed postgraduate study at the State University of Iowa.

Dr. J. W. Donnell has reopened his office at Hudson after spending the past few months in Florida.

Dr. Lester Dyke, formerly head surgeon at Schick Hospital, Clinton, opened offices in Sheldon the first of the year. He was on the staff of Walter Reed Hospital in Washington, D. C., prior to the war.

Dr. J. N. Elsworth left Harlan December 20 to join the De Puy Sarkness Clinic in Jamestown, S. D., where he will take specialized training. He had

practiced in Harlan since his discharge from the army.

Dr. Arthur S. Fourt opened offices for the general practice of medicine in Melbourne. Dr. Fourt was graduated from the State University of Iowa College of Medicine in 1925. He practiced in Brighton, Iowa, before joining the staff of the University Hospitals in 1928, then the Army Medical Corps in 1941. He recently completed a refresher course at the University of Iowa.

Dr. Kenneth Gee has established offices for the practice of medicine in Shenandoah. Following his release from the army, he took graduate study at the University of Southern California where he specialized in internal medicine.

Dr. Frank T. Hartman, 76, of Waterloo, retired from active practice in December following forty-nine and one-half years of practice, the first of which was in Victoria, Tex., and the remainder in Waterloo. He and Mrs. Hartman left for Florida, where they plan to visit until May 1.

Dr. Lewis H. Jacques, physician and surgeon, purchased the practice of Dr. C. M. Cantrell of Lone Tree, who is retiring from active practice. Dr. Jacques was graduated from the State University of Iowa College of Medicine in 1942 and interned at the University of Kansas. Following his release from the army, he was associated with Dr. Cantrell.

Dr. M. A. Kadel, formerly of Tipton, located in Hankinson, N. D., the first of the year. He was graduated from the University of Iowa College of Medicine in 1933.

Dr. William W. Kearney, formerly of Dubuque, has become a member of the staff at the Oakdale Sanatorium. He was recently released from military service prior to which he practiced in El Paso, Tex.

Dr. E. C. Knight of Garwin recently sold his practice to Dr. Barbieri of Osceola. He and his family have moved to Marshalltown. Dr. Knight plans to enter a university for further study in surgery.

Dr. Frederick H. Lamb of Davenport was elected to the board of governors of the College of American Pathologists at the organization's meeting in Chicago in December.

Dr. A. G. Lueck has become associated with Dr. E. B. Winnett of Des Moines in the practice of medicine. Dr. Lueck was recently released from the navy prior to which he was located in Rochester, Minn.

Dr. James D. Mahoney of Council Bluffs spoke to members of the Council Bluffs Service League at their January meeting. He discussed the function and operation of a child guidance clinic and the results expected.

Dr. John W. Mathiasen has become associated with his brother, Dr. Henning W. Mathiasen, of Council Bluffs. A graduate of the Creighton School of Medicine, he was recently discharged from the Army Air Forces.

Dr. Joseph Schiff, former Anita physician and surgeon who has been stationed at the Veterans Administration, Walla Walla, Wash., two years, has received his discharge and is remaining in Walla Walla as a civilian physician in the department of medicine and surgery of the Veterans' Administration.

Dr. John M. Schutter, formerly of West Bend, has moved to Mallard where he will be associated in the practice of medicine with Dr. Edmund D. Beatty and Dr. George H. Keeney. He was graduated from the State University of Iowa College of Medicine in 1942. Dr. Schutter interned at St. Joseph's Mercy Hospital, Phoenix, Ariz., served in the Army Medical Corps three years, and took a refresher course in medicine at the University of Illinois.

Dr. Charles D. Shelton of Bloomfield retired from the active practice of medicine in January after serving Davis County since the time of his graduation from medical school in 1899.

Dr. W. A. Stephenson, recently discharged from the Navy, has joined Dr. M. P. Wees in the practice of medicine in Newton. A graduate of the University of Kansas School of Medicine, Dr. Stephenson served two years as a resident physician at the University Hospital, Iowa City, where he worked in neuro-psychiatry.

Dr. Fred Sternagel of West Des Moines was recently appointed to the State Board of Health for a two-year term by Gov. Robert D. Blue, replacing Dr. Addison C. Page. Others reappointed for two-year terms were Dr. I. N. Crow, Fairfield; Dr. E. M. Myers, Boone; Dr. Prince E. Sawyer, Sioux City; and Dr. Herbert E. Stroy, Osceola.

Dr. A. J. R. Stueland, recently discharged from the armed forces, opened an office for the general practice of medicine in the Foresters Building in Mason City. He is a graduate of the University of South Dakota School of Medicine.

Dr. Frederick J. Swift, Jr., has returned to Maquoketa after spending eight months at the Henry Ford Hospital in Detroit, Mich., completing a refresher

course for army surgeons. He served five years, holding the rank of lieutenant colonel at the time of his discharge.

W. Gray Walter, director of the electroencephalogram laboratory at the Burden Neurological Institute, Bristol, England, presented a lecture at the University Hospital, Iowa City, December 18 on "New Methods of Analysis of the Electroencephalogram." It was one of the three lectures given in the United States by Mr. Walter, the others being at Massachusetts General Hospital, Boston, and the Mayo Clinic, Rochester, Minn.

Iowa doctors received into fellowship in the American College of Surgeons on December 20 during the Clinical Congress in Cleveland were: Philip I. Crew, Marion; Milton F. Kiesau, Postville; Augustus B. Kuhl, Jr., Davenport; Leo H. LaDage, Davenport; Robert O. Garlinghouse, William C. Huffman, Carl A. Jacobs, Otis S. Lee, Jr., Clarence J. Mikelson, Vernon W. Petersen, Vernon G. Watters, Jr., and Walter W. Webb, all of Iowa City.

WEDDING ANNOUNCEMENT

Miss Polly Van Zile, daughter of Mr. and Mrs. Loren G. Van Zile of Evanston, Ill., became the bride of Dr. Richard Morris Moore, son of Mrs. Fred Moore and the late Dr. Moore of Des Moines, on December 21. The ceremony was performed in the Second Presbyterian Church, Bloomington, Ill., by Dr. Harold R. Martin. Following a wedding trip to Gulfport, Miss., the couple established a home in Des Moines, where Dr. Moore is interning at Iowa Methodist Hospital.

DEATH NOTICES

Campbell, Benjamin Franklin, of Burlington, aged 72, died December 31 following a two-month illness. He was graduated from the College of Physicians and Surgeons, Keokuk, in 1897 and had practiced in Burlington forty-nine years. At the time of his death he was a member of the Des Moines County and Iowa State Medical Societies.

Day, William E., of Clarksville, aged 72, died of a heart attack at his home January 9. Dr. Day was a graduate of the State University of Iowa College of Medicine with the class of 1902 following which he practiced in Clarksville until his death. He was a member of the Butler County and Iowa State Medical Societies.

Hogle, William Milo, of Keokuk, aged 70, died December 29 at his home following a heart attack. A graduate of the Keokuk Medical College, College of Physicians and Surgeons, with the class of 1901, he had practiced in Keokuk forty-five years. He was a member of the Lee County and Iowa State Medical Societies.

Koeneman, Eugene Oscar, aged 76, formerly of Eldora, was killed January 9 in a railroad crossing accident seventy-five miles east of Barstow, Calif., to which he was en route to visit his son. Dr. Koeneman was graduated from the University of Illinois College of Medicine, Chicago, in 1899, since which time he had practiced in Eldora. At the time of his death he was a member of the Hardin County and Iowa State Medical Societies.

Matthews, Damon G., aged 68, of Milton, died January 9 at an Ottumwa hospital following an extended illness. A graduate of the St. Louis College of Physicians and Surgeons with the class of 1911, he practiced in Missouri before coming to Milton ten years ago. Dr. Matthews was a member of the Van Buren County and Iowa State Medical Societies at the time of his death.

Snodgrass, Ralph W., aged 39, of Des Moines was recently declared legally dead by the War Department. An army physician, he was lost in the sinking of the Jean Nicolet in July, 1944, in the Indian Ocean. Dr. Snodgrass was graduated from the Rush Medical College in 1932 since which time he had practiced in Des Moines. He was a member of the Polk County and Iowa State Medical Societies.

GOLF TOURNAMENT

The Iowa State Medical Golf Association held a tournament at the Wakonda Club, Des Moines, April 17, 1946. Donors of the prizes given were: Mead Johnson and Company; White Laboratories, Inc.; E. R. Squibb and Sons; Ames Company, Inc.; Physicians and Hospital Supply Company; Sterns and Company; Riggs Optical Company; American Optical Company; Barnett and Ramel Optical Company; Standard Chemical Company; Philip Morris and Company, Ltd.; Pitman-Moore Company; Holland Rantos Company, Inc.; Aloe Company Medical and Surgical Supply Company; Lederle Laboratories, Inc.; Abbott Laboratories; and the Hygeia Nursing Bottle Company.

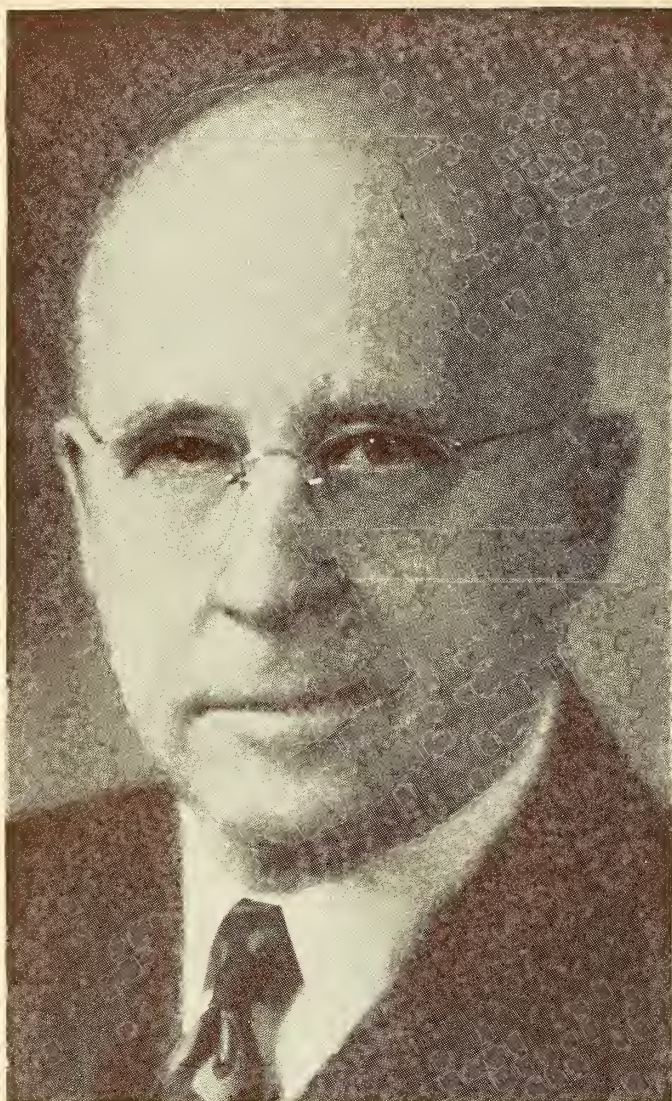
The golfers greatly appreciate the support and generosity of the above listed companies. It is the group's aim to get more and more physicians interested in golf for their own good physically, mentally, and for their unrecorded vocabularies.

Officers for 1947 are: Dr. E. L. Emerson of Muscatine, president; Dr. L. L. Carr of West Union, secretary-treasurer. The latter officer has informed the organization that \$20 donated in 1946 by the Hygeia Nursing Bottle Company of Buffalo, N. Y., is on hand.

The 1947 tournament will be held April 15 at the Golf and Country Club, Des Moines.

CHANGE OF ADDRESS

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 505 Bankers Trust Bldg., Des Moines 9, Iowa.



ROBERT L. PARKER, M.D.

PRESIDENT
IOWA STATE MEDICAL SOCIETY
1946-1947

The JOURNAL *of the* Iowa State Medical Society

Vol. XXXVII

Des Moines, Iowa, March, 1947

No. 3

IOWA STATE MEDICAL SOCIETY

Organized in 1850

Ninety-Sixth Annual Session

Des Moines, Iowa, April 16-18, 1947

Hotel Fort Des Moines

PROGRAM OF GENERAL SESSIONS

Main Ball Room

Wednesday Afternoon, April 16

PEDIATRIC AND OBSTETRIC SYMPOSIUM

Charlotte Fisk, M.D., Des Moines, and Howard A. Weis, M.D., Davenport, Co-Chairmen

2:00 Greetings—

MALCOM A. ROYAL, M.D., President
Polk County Medical Society

Response—

HOWARD I. DOWN, M.D., Second Vice
President, Iowa State Medical Society

2:10 Principles Governing the Choice and Parental Administration of Fluids

ALEXIS F. HARTMANN, M.D., St. Louis
Professor of Pediatrics, Washington
University School of Medicine

2:50 Diabetes in Pregnancy

RALPH A. REIS, M.D., Chicago
Assistant Professor of Obstetrics and
Gynecology, Northwestern University
Medical School

3:30 Intermission

3:40 Obstetrics—Yesterday and Today

RALPH LUIKART, M.D., Omaha
Associate Professor of Obstetrics
Creighton University Medical School

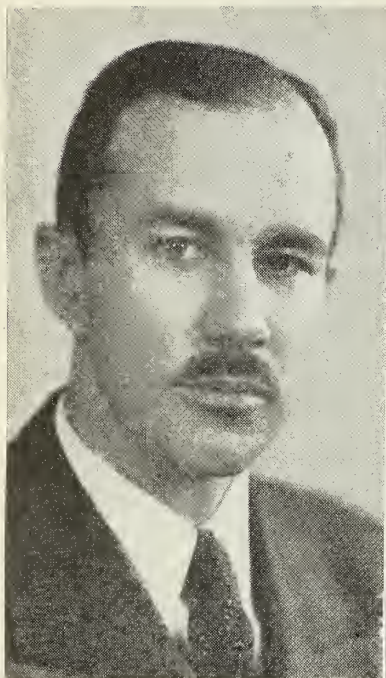
4:10 The Rh Factor (Slides)

JOHN R. SCHENKEN, M.D., Omaha
Associate Professor of Pathology and
Bacteriology, University of Nebraska
Medical School

4:20 Endocrinology in Obstetrics and Gynecology

WILLIS E. BROWN, M.D., Iowa City
Associate Professor of Obstetrics and
Gynecology, State University of Iowa
College of Medicine
(Co-author: J. T. BRADBURY, Sc.D.)

GUEST SPEAKERS



JOSEPH B. VANDER VEER, M.D.



RALPH LUIKART, M.D.



GEORGE F. LULL, M.D.



RALPH A. REIS, M.D.



ARTHUR M. CULLER, M.D.



ALEXIS F. HARTMANN, M.D.

PROGRAM OF GENERAL SESSIONS

Main Ball Room

Thursday, April 17

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| <p>9:00 Some Provocative Cases
CHARLES W. MAYO, M.D., Rochester
Associate Professor of Surgery, University of Minnesota Graduate School of Medicine</p> <p>9:50 Intermission</p> <p>10:10 Psychosomatic Medicine: General Considerations
HARLAN CRANK, M.D., Topeka
Menninger Foundation</p> | <p>10:55 Hemorrhage in the Fundus
ARTHUR M. CULLER, M.D., Columbus
Associate Professor of Ophthalmology
Ohio State University College of Medicine</p> <p>11:25 Adjournment</p> <p>4:00 Uterine Bleeding
GRANDISON D. ROYSTON, M.D., St. Louis
Professor of Clinical Obstetrics and Gynecology, Washington University School of Medicine</p> |
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Friday, April 18

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| <p>9:00 Principles of Digitalis Therapy and Comments on Various Preparations and Methods of Administration
JOSEPH B. VANDER VEER, M.D., Philadelphia
Head of Cardiovascular Department, Pennsylvania Hospital</p> <p>9:45 The Family Physician and the School Health Program
GERTRUDE CROMWELL, R.N., M.S., Des Moines
Supervisor of Health Education and School Nursing</p> <p>10:15 Intermission</p> <p>10:30 Some Problems of Biliary Tract Disease
ISIDOR S. RAVDIN, M.D., Philadelphia
Professor of Surgery, University of Pennsylvania School of Medicine</p> <p>11:15 Report of House of Delegates—Installation of President</p> <p>11:30 Adjournment</p> | <p>3:00 Symposium on Poliomyelitis
LEWIS M. OVERTON, M.D., Des Moines, Chairman</p> <p>Historical Discussion
RALPH K. GHORMLEY, M.D., Rochester
Professor of Orthopedic Surgery, University of Minnesota Graduate School of Medicine</p> <p>Epidemiology
GAYLORD W. ANDERSON, M.D., Minneapolis
Professor of Preventive Medicine and Public Health, University of Minnesota Medical School</p> <p>Diagnosis
LEE F. HILL, M.D., Des Moines</p> <p>Present Concept of Treatment
EARL C. ELKINS, M.D., Rochester
Consultant on Physical Medicine
Mayo Clinic</p> |
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PRECONVENTION CLINIC

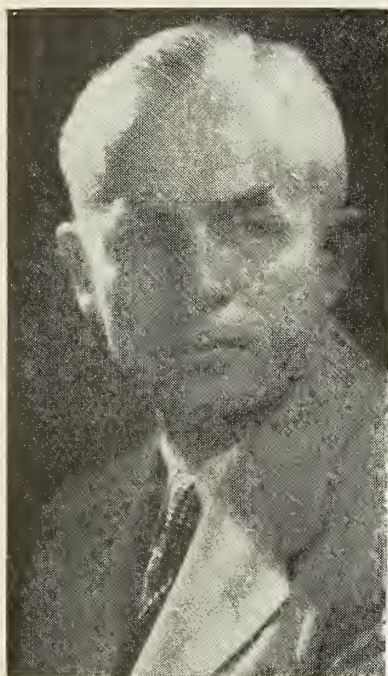
Broadlawns Polk County Hospital
Eighteenth and Hickman Road

Presented by Broadlawns Attending and House Staff Members

All members of the Iowa State Medical Society are cordially invited to attend this preconvention clinic.

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| <p>9:00 Greetings
CLIFFORD W. LOSH, M.D., Chief of Staff</p> <p>9:10 Thoracoplasty in Pulmonary Tuberculosis
MARY ELIZABETH GODFREY, M.D.
Surgical Procedure
EDWARD J. DREW, M.D.</p> <p>10:00 Diabetes Mellitus
ABRAHAM A. TOUBES, M.D.</p> | <p>10:30 Examination of the Unconscious Patient
HENRY G. DECKER, M.D.</p> <p>11:15 Basic Principles of the Treatment of Fracture
LEWIS M. OVERTON, M.D.
F. EBERLE THORNTON, M.D.</p> <p>12:30 Luncheon at the Hospital</p> |
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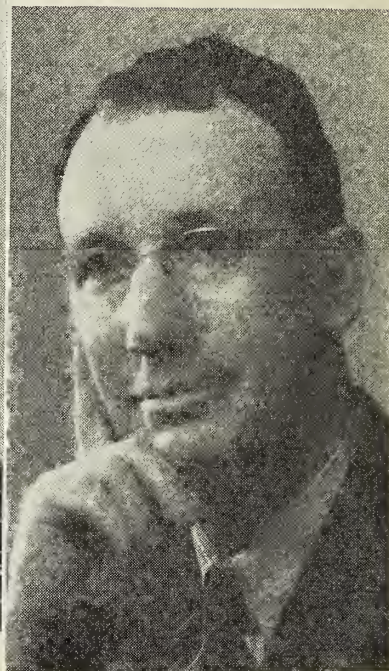
GUEST SPEAKERS



CHARLES W. MAYO, M.D.



RALPH K. GHORMLEY, M.D.



HARLAN CRANK, M.D.

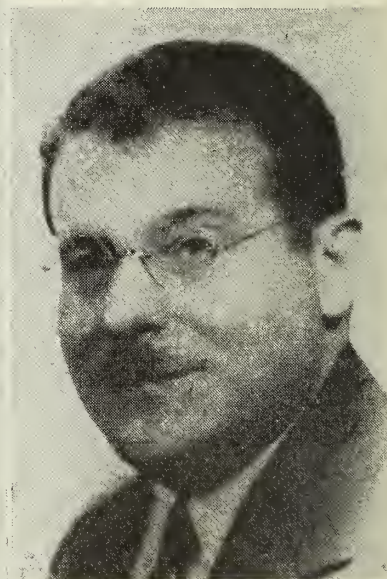
Left—

GERTRUDE CROMWELL,
R.N., M.S.



Right—

ISIDOR RAVDIN, M.D.



SECTION MEETINGS

Medical Section

Herbert W. Rathe, M.D., Waverly, Chairman

Thursday Afternoon, April 17

Main Ball Room

- 2:00 Chairman's Address
HERBERT W. RATHE, M.D., Waverly
- 2:10 Problems of Therapy in Psychosomatic Disease
HARLAN CRANK, M.D., Topeka
Menninger Foundation
- 2:30 The Mechanics of Functional Gastro-intestinal Complaints
DANIEL A. GLOMSET, M.D., Des Moines
- 2:45 Headaches
WILLIAM C. EGLOFF, M.D., Mason City
- 3:00 Therapeutic Emergency Measures in Asthma
LAWRENCE J. HALPIN, M.D., Cedar Rapids
- 3:15 Recent Advances in Antibiotic Therapy
FOREST H. COULSON, M.D., Burlington
- 3:30 Anticoagulant Drugs Dicoumarol and Heparin
DIEDRICH J. HAINES, M.D., Des Moines
- 3:45 Use of Anticoagulants in the Management of Acute Myocardial Infarction
ROBERT L. PARKER, JR., M.D., Rochester
Associate Professor of Medicine,
University of Minnesota Graduate School of Medicine
- 4:00 Recess for General Session

Friday Afternoon, April 18

South Ball Room

- 2:00 Diagnosis and Treatment of Acute Pericarditis
JOSEPH B. VANDER VEER, M.D.,
Philadelphia
Head of Cardiovascular Department
Pennsylvania Hospital
- 2:30 Diagnosis of Congenital Cardiac Malformations for Which Surgery Is Indicated
ROBERT L. PARKER, JR., M.D., Rochester
Associate Professor of Medicine,
University of Minnesota Graduate School of Medicine

Surgical Section

Joseph B. Priestley, M.D., Des Moines, Chairman

Thursday Afternoon, April 17

South Ball Room

- 2:00 Chairman's Address
JOSEPH B. PRIESTLEY, M.D., Des Moines
- 2:10 Malignant Lesions of the Right Portion of the Colon: Resection and End-to-end Anastomosis
CHARLES W. MAYO, M.D., Rochester
Associate Professor of Surgery,
University of Minnesota Graduate School of Medicine
- 2:40 The Etiology and Surgical Treatment of Intestinal Obstruction
LESTER D. POWELL, M.D., Des Moines
- 3:00 Curare—Its Past and Present Status
STUART C. CULLEN, M.D., Iowa City
- 3:20 Use of Penicillin in Surgery
PHILIP L. BETTLER, M.D., Sioux City
- 3:40 Renal Calculi
RUBEN H. FLOCKS, M.D., Iowa City
- 4:00 Recess to General Session

Friday Afternoon, April 18

Main Ball Room

- 2:00 Appendicitis
ISIDOR S. RAYDIN, M.D., Philadelphia
Professor of Surgery, University of
Pennsylvania School of Medicine
- 2:30 Degenerative Changes in the Knee Joint Following Internal Derangement
RALPH K. GHORMLEY, M.D., Rochester
Professor of Orthopedic Surgery,
University of Minnesota Graduate School of Medicine
- 3:00 Recess for General Session

SECTION MEETINGS

Eye, Ear, Nose and Throat Section

James E. Reeder, Jr., M.D., Sioux City, Chairman
Thursday Morning, April 17
 The Ranch

- 9:30 Chairman's Address—Recent Advances in Ophthalmology
 JAMES E. REEDER, JR., M.D., Sioux City
- 9:45 Allergy in Otolaryngology
 ORAL L. THORBURN, M.D., Ames
 Discussor:
 JOHN E. STANSBURY, M.D., Cedar Rapids
- 10:15 Management of Strabismus in Children
 ABBOTT M. DEAN, M.D., Council Bluffs
 Discussor:
 THOMAS L. MCKEE, M.D., Fort Lauderdale
- 10:45 Recess to Main Ball Room for General Session Meeting
- 12:15 Luncheon—The Ranch
- 2:00 The Orbit after Enucleation
 ARTHUR M. CULLER, M.D., Columbus
 Associate Professor of Ophthalmology
 Ohio State University College of Medicine
- 2:30 Dental Problems in Otolaryngology
 A. REAS ANNEBERG, M.D., Carroll
 Discussor:
 JOHN E. ROOK, M.D., Davenport
- 3:00 Recent Advances in the Medical and Surgical Treatment of Primary Glaucoma
 RUSSELL M. WOLFE, M.D., Marshalltown
 Discussor:
 PLACIDUS J. LEINFELDER, M.D., Iowa City
- 3:30 Penicillin in Otolaryngology
 LELAND H. PREWITT, M.D., Ottumwa
 Discussor:
 JACK V. TREYNOR, M.D., Council Bluffs
- 4:00 Plastic Surgery of the Eyelids
 CARL A. NOE, M.D., Cedar Rapids
 Discussor:
 LINCOLN F. STEFFENS, M.D., Dubuque
- 4:30 Diagnosis and Treatment of Salivary Calculi
 FRANCIS P. QUINN, M.D., Dubuque
 Discussor:
 GEORGE J. PEARSON, M.D., Burlington

Pediatric Section

Charlotte Fisk, M.D., Des Moines, Chairman
Thursday Morning, April 17
 Blank Memorial Hospital
 9:00 a. m.

- Congenital Stridor in Infancy
 ARNOLD M. SMYTHE, M.D., Des Moines
- An Analysis of the Patients with Meningitis Admitted to the Raymond Blank Memorial Hospital
 JOSEPH M. STANDEFER, M.D., Des Moines

Treatment of Meningitis
 ALEXIS F. HARTMANN, M.D., St. Louis, Professor of Pediatrics, Washington University School of Medicine

Diaphragmatic Hernia
 PERRY P. AMICK, M.D., Des Moines

Intestinal Obstruction in Infancy
 JAMES E. DYSON, M.D., Des Moines

Acute Hemolytic Anemia
 LEE FORREST HILL, M.D., Des Moines

Infantile Cortical Hyperostosis
 CHARLOTTE FISK, M.D., Des Moines

Iowa Pediatric Society

Wednesday, April 16
 Informal Dinner—Des Moines Club
 7:00 p. m.

Iowa Anesthesiological Society

Friday, April 18
 The Ranch
 12:15—Luncheon

Continuous Spinal Anesthesia
 EDWARD B. TUOHY, M.D., Mayo Clinic, Rochester
 President-elect, American Society of Anesthesiologists

State Society of Iowa Medical Women

and

American Medical Women's Association, Branch 19

Wednesday, April 16
 Younkers Tea Room
 Dinner—6:30 p. m.

Informal Discussion
 Recent Developments in Medicine
 Building Program of the Medical Women's Library

Election of Officers
 Officers elect:
 Nelle Thomas Schultz, M.D., Humboldt, President
 Grace M. Sawyer, M.D., Woodward, Secretary
 Edna Sexsmith, M.D., Greenfield, Treasurer

House of Delegates

First Meeting, Wednesday Evening, April 16
8:00 p. m.

South Ball Room—Hotel Fort Des Moines

Roll Call
Approval of Minutes of Friday Morning Session, 1946
President's Address
President-elect's Address
Reports of Officers
Reports of Committee Chairmen
Memorials and Communications
New Business
Election of Committee on Nominations

Second Meeting (Time and place to be determined at first meeting)

Roll Call
Reading of Minutes
Report of Committee on Nominations
Election of Officers
Reports of Committees
Unfinished Business
New Business
Announcement of Committees
Adjournment

Annual Banquet

Thursday, April 17

Main Ball Room

6:30 p. m.

Address

GEORGE F. LULL, M.D., Secretary and General Manager, American Medical Association

Hobby Show

Plans are being made to hold a hobby show in connection with the annual meeting of the Iowa State Medical Society. A room has been reserved on the third floor of Hotel Fort Des Moines and it is hoped that many physicians who did not have time to bring in their exhibits last year will do so this year. All doctors with a hobby are cordially invited to exhibit. Write the central office, 505 Bankers Trust Building, Des Moines 9, and make arrangements for space. This should be done by April 1.

Golf Tournament

The Iowa State Medical Golf Association will hold a tournament at the Golf and Country Club, Des Moines, April 15. All those interested should be on hand that day or contact one of the officers for further details prior to that date. Dr. E. L. Emerson of Muscatine is president of the organization and Dr. L. L. Carr of West Union is secretary-treasurer. Prizes will be given.

List of 1947 Exhibitors

A. S. Aloe Company, St. Louis, Missouri
American Optical Company, Des Moines, Iowa
Ames Company, Elkhart, Indiana
The Borden Company, New York, New York
Burroughs-Wellcome & Co., Tuckahoe, New York
Cameron Heartometer Company, Chicago, Illinois
Ciba Pharmaceutical Products, Summit, New Jersey
J. H. Emerson Company, Cambridge, Massachusetts
C. B. Fleet Company, Lynchburg, Virginia
H. J. Heinz Company, Pittsburgh, Pennsylvania
Paul B. Hoeber, Inc., New York, New York
Hoffmann-LaRoche, Inc., Nutley, New Jersey
Holland-Rantos Co., Inc., New York, New York
Hygiea Nursing Bottle Company, Buffalo, New York
"The 'Junket' Folks," Little Falls, New York
Lederle Laboratories, Inc., New York, New York
Libby, McNeill & Libby, Chicago, Illinois
Eli Lilly and Company, Indianapolis, Indiana
J. B. Lippincott Company, Philadelphia, Pennsylvania
Maico Company, Des Moines
Mead Johnson and Company, Evansville, Indiana
Medical Protective Company, Fort Wayne, Indiana
V. Mueller & Company, Chicago, Illinois
National Dairy Council, Chicago, Illinois
Ortho Pharmaceutical Company, Linden, New Jersey
Parke, Davis & Company, Detroit, Michigan
Pet Milk Sales Corporation, St. Louis, Missouri
Philip Morris & Co. Ltd. Inc., New York, New York
Physicians & Hospitals Supply Company, Minneapolis, Minnesota
Picker X-Ray Corporation, Sioux City, Iowa
Pitman-Moore Company, Indianapolis, Indiana
Professional Management-Iowa, Waterloo, Iowa
Radium and Radon Corporation, Chicago, Illinois
Rexair, Inc., Detroit, Michigan
Riggs Optical Company, Des Moines
W. B. Saunders Company, Philadelphia, Pennsylvania
Schering Corporation, Bloomfield, New Jersey
G. D. Searle & Company, Chicago, Illinois
Seiler Surgical Company, Omaha, Nebraska
Sharp & Dohme, Philadelphia, Pennsylvania
Siebrandt Mfg. Co., Kansas City, Missouri
E. R. Squibb & Sons, New York, New York
Standard Chemical Company, Des Moines, Iowa
Ulmer Pharmacal Company, Minneapolis, Minnesota
White Laboratories, Inc., Newark, New Jersey
The Zemmer Company, Pittsburgh, Pennsylvania

WOMAN'S AUXILIARY

to the

Iowa State Medical Society

Organized May 9, 1929, Des Moines, Iowa

EIGHTEENTH ANNUAL MEETING

Headquarters—Hotel Savery
Des Moines, Iowa

PROGRAM

Wednesday, April 16

12:00 noon Luncheon, Hotel Savery
For Board Members and County Auxiliary Presidents
MRS. JESSE D. HAMER, Phoenix, Arizona, National President, will be present

2:00 p. m. Executive Board Meeting

Thursday, April 17

Hotel Savery
9:30 a. m.

Mrs. M. H. Brinker, President, presiding

Invocation—

MRS. GEORGE H. WATERS, Des Moines

Address of Welcome—

MRS. FLOYD A. SPRINGER, President, Polk County
Woman's Auxiliary

Response—

MRS. FRED MOORE, Des Moines, President-elect

Reading of Minutes of Last Meeting—

This Past Year—

MRS. M. H. BRINKER, President

Our National President—

MRS. JESSE D. HAMER, Phoenix, Arizona

12:15 p. m.—Luncheon—12:15 p. m.

Greetings—

ROBERT L. PARKER, M.D., Des Moines, President, Iowa State Medical Society

Greetings—

HAROLD A. SPILMAN, M.D., Ottumwa, President-elect, Iowa State Medical Society

Presentation of our National President, Mrs. Jesse D. Hamer, Phoenix, Arizona

Our County Presidents—

MRS. C. A. NICOLL, Panora, officiating

If Your Child Were Handicapped—

MR. CLYDE CARTER, Director of Recreation, Iowa Society for Crippled Children

In Memoriam—

MRS. H. I. MCPHERRIN, Des Moines

Adjournment—

Friday, April 18

Hotel Savery
9:30 a. m.

Mrs. M. H. Brinker, President, presiding

Reading of Minutes—

What We Should Strive For—

MRS. FRED MOORE, Des Moines

Report of Nominating Committee—

Election of Officers—

11:00 a. m.—Brunch—11:00 a. m.

Style Show—

Cownie's, Des Moines

Report of Resolutions Committee—

Installation of Officers—

Election of Delegates to National Convention—

Adjournment—

Postconvention Board Meeting
3:30 p. m.

IOWA STATE MEDICAL SOCIETY

Officers and Committees, 1946-1947

President.....Robert L. Parker, Des Moines
 President-Elect.....Harold A. Spilman, Ottumwa
 First Vice President.....John W. Billingsley, Newton
 Second Vice President.....Howard I. Down, Sioux City
 Secretary.....John C. Parsons, Des Moines
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Term
Expires

First District—Leslie L. Carr, West Union, Secretary.....1947
 Second District—Charles H. Cretzmeyer, Algona, Chairman.....1948
 Third District—James B. Knipe, Armstrong.....1949
 Fourth District—Robert N. Larimer, Sioux City.....1950
 Fifth District—Edward F. Beeh, Fort Dodge.....1951
 Sixth District—James C. Hill, Newton.....1947
 Seventh District—Harold A. Housholder, Winthrop.....1948
 Eighth District—Clyde A. Boice, Washington.....1949
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ALTERNATE DELEGATES TO A. M. A.

George C. Albright, Iowa City.....1948
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 Gerald V. Caughlan, Council Bluffs.....1947

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THE JOURNAL

Everett M. George, Editor.....Des Moines

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SCIENTIFIC SECTION

ACUTE HEPATITIS

Daniel A. Glomset, M.D., Des Moines

Bamburger (1855) and Virchow (1865) promulgated and popularized the simple concept that the syndrome of relatively painless jaundice in the young was caused by a catarrhal obstruction of the major biliary passages. Virchow's prestige stunted scientific observation for eighty years. Only recently has the complexity of the disease been revealed and the jaundice found to be primarily due to a profound destruction of the liver parenchyma. It is the purpose of this article to describe the disease in the light of the new knowledge. My interest in hepatitis was aroused by the observation of a large number of cases in a General Hospital in England in 1944 and 1945, 85 of which form the factual basis of this presentation.

Etiology

The etiology of hepatitis has received a great deal of attention in the past decade, yet not one of Koch's postulates has been fulfilled: (1) almost everyone assumes that an infectious organism is the cause of the disease, yet no one has seen the organism; (2) the causative agent has not been grown either on synthetic or living media; (3) there is only fragmentary evidence that the disease can be transmitted through a second passage.

Most of the experimental work performed has been on the transmission of the disease. Many articles describe hepatitis in the human following injections of human serum. This leads to the conclusion that the disease is caused by some substance in the serum. While this is "post hoc ergo propeter hoc" reasoning, the consistency of the observations merit serious consideration. Thus Turner et al.²⁴ reviewed 4,083 cases of hepatitis following injection of human serum containing yellow fever vaccine. McArthur¹⁸ reviews an additional 46 cases following the same type of procedure. Findlay⁹ et al. describes 689 similar cases. Fox found that 62 per cent of 766 cases injected with the human serum containing yellow fever vaccine developed jaundice. Other serum containing agents have been incriminated. Neefe and co-workers¹⁶ found that 4 out of 5 human volunteers injected with pooled mumps convalescent serum developed hepatitis with jaundice and the fifth, "hepatitis without jaundice." Steiner

discusses 5 cases of jaundice following blood transfusion. Scores of other articles blame glycerinated humanized smallpox lymph, measles convalescent serum and pooled dry plasma. Havens, Paul and Rooyen¹¹ summarize reports on transmission of hepatitis to human volunteers by injection of human serum taken from individuals suffering from hepatitis. They also mention unpublished experiments which indicate that the agent can be transmitted in serial passage.²

They summarize other possible methods of transmission. In brief, nasal washings, urine, and duodenal drainage material have been fed or sprayed into the throats of human volunteers with negative results, whereas the administration of various types of fecal extracts produces jaundice with some regularity. From an epidemiologic study of hepatitis in troops in Africa, Kirk also concludes that feces may play a role in the transmission of the disease. He describes a localized epidemic of hepatitis at El Alamein in 1942 on ground previously contaminated by German Troops. British Army reports suggest that the incidence of hepatitis increases with crowding and poor sanitation. Kirk thinks flies are the most likely vectors, but has no factual basis for this suggestion. It would seem that direct contact plays a very small role. Of the 85 patients in this series only 13 knew of possible contact. Hospital personnel in direct contact with the disease rarely develop jaundice.

Witts²⁸ points out an interesting discrepancy between the incubation period of "epidemic hepatitis" and "serum jaundice," both of which are thought to be caused by the same type of agent. The incubation period in serum jaundice is 60 to 90 days, whereas in epidemic hepatitis it is thought to be about 30 days. This fact is difficult to explain, for a virus should not require more time to cause the disease after parenteral administration of the organism than by the natural route of infection.

Attempts to transfer the disease to animals have been disappointing. Cox et al.⁵ have described fatal, acute necrosis of the liver in horses following immunization for equine encephalomyelitis with a horse-serum vaccine, but I am not aware of positive transmission experiments from human to horse so that we must conclude that there is no experimental animal susceptible to the agent causing human hepatitis.⁴

Another phase of the problem making study of the etiology difficult is the low susceptibility of humans. Attempts have been made to explain why some get the disease and others do not, but no conclusions have been reached. Thus Jones¹⁴ says that there is little doubt that nutrition and old age increases susceptibility to liver damage, but individuals in the army are both well fed and young. Witts²⁸ discusses predisposing factors such as diet, contaminated mess gear, contact and chilling, but can incriminate none of these. He further states that alcohol, arsenic and sulfonamides play no part in susceptibility to hepatitis. Acquired immunity must be slight, for Witts²⁸ mentions a 2 per cent recurrence. In the present series there were 2 out of 85 who gave a story of a previous attack.

In the present series of 85 cases, questions were asked as to prevalence of significant events occurring before the onset of jaundice with the following results:

Table I

Yellow fever vaccination in past year*.....	5
Penicillin therapy in past six months.....	35
Sulfonamide therapy in past six months.....	20
Plasma or blood infusion in past six months...	16
Arsenical therapy in past six months.....	7
Contact known of by patient.....	13
Prodromal "cold"	48
Miscellaneous possible causes.....	9
No known possible etiologic factor.....	7
Total cases	85

Some items such as penicillin and sulfonamide therapy probably have no etiologic significance. Others such as the prodromal "cold" which antecedes the jaundice may be an early symptom of the disease.

In summary, the present consensus is that the disease is caused by a filtrable virus spread by excreta, or by parenteral administration of human serum containing agents.

Morbid Anatomy

The sequence of gross and microscopic changes occurring in hepatitis has been enlightened through the media of punch biopsy studies, and of necropsy reports on cases which died either from the disease or from unrelated causes.

Gross pathologic changes of interest may be typified by giving the report of an acute fatal case.

Patient No. 1:

The body was that of a moderately well developed and nourished white male of 21 years. The

skin was darkly jaundiced. There was no edema. The tongue was coated. Shotty, movable lymph nodes were palpated in the cervical, axillary, and inguinal regions.

The abdominal cavity contained about 25 cc. of clear, icteric fluid. The omentum was densely adherent to the site of an old appendectomy. There were thread-like, fibrous adhesions extending from the right anterior abdominal wall to the hepatic flexure of the colon and the right lobe of the liver. Scattered throughout the mesentery and over the serosal surface of the large and small intestine, there were hemorrhagic foci of varying size. Numerous "bean-sized" lymph nodes were found in the mesentery. Each pleural cavity and the pericardial cavity contained about 10 cc. of clear yellow fluid. There were a few petechial hemorrhages in the pericardium.

The right lung weighed 740 gm., the left 615 gm. Coin-sized, irregular, slightly elevated hemorrhagic areas were noted beneath the pleura of all lobes. Section of the lungs revealed a dark, grayish red surface mottled irregular hemorrhagic areas. Scattered small areas throughout all lobes were more firm than adjacent tissue. The bronchi were lined by an edematous, grayish-red mucosa and contained sanguinous, frothy, icteric material.

The liver weighed 1530 gm. It was softer than normal but of approximately normal size. It was predominantly dark grayish-brown but was speckled with light yellowish-brown areas. The capsule was smooth except for slight wrinkling on the inferior surface of the organ. There was a varied appearance to surfaces made by section. In some locations individual lobules could be identified with dark reddish-brown central areas and light yellowish-brown peripheral regions; in other parts there was loss of the usual lobular outlines. The gall bladder and bile ducts were not grossly unusual.

The spleen weighed 500 grams. The surface revealed by section was firm and the dark red pulp scraped away with difficulty. Pinhead sized lymphoid aggregates were prominent throughout the lining of the gastro-intestinal tract. The intestines were not otherwise remarkable. Gross examination of the heart, pancreas, adrenals, kidneys, urinary bladder, prostate, bone marrow, and brain were within normal limits.

* * * * *

The gross appearance of the liver varies with the duration of the disease. The liver is at first enlarged, and the capsule tight. Next the organ shrinks and the capsule wrinkles due to collapse of the parenchyma. If death occurs in this stage the liver may, be less than half its normal weight.^{15a} In the usual course of the disease nor-

*No human serum used in present vaccines.

mal size and configuration is regained in three to four weeks. When the course is prolonged and death from "yellow atrophy" ensues, the liver may have regained its normal size due to irregular regeneration of parenchymal tissue.

In fatal cases there are often ecchymoses and petechiae throughout the thorax and the abdomen. The spleen is moderately enlarged in 75 per cent of cases.^{15a} Ascites occurs in 60 per cent of the chronic fatal cases.^{15a} Phlegmonous infiltration of the intestines occurs in 15 per cent of cases.^{15a}

Microscopic changes in acute fatal cases simulate the results of an atomic bomb raid; almost all of the parenchymal cells of the liver are destroyed; only the shell of the liver city with some of its supporting superstructure remains. Microscopic changes may be similar to one of our fatal cases:

Patient No. 2:

Myocardial fibers are "loosely arranged." Scattered about some small blood vessels are lymphocytes, a few plasma cells and neutrophilic leukocytes. One small subendocardial hemorrhage is present.

In all lobes of the lungs there are ill-defined hemorrhages and marked congestion. The greater part of both lungs is involved by a patchy inflammatory process, characterized by large masses of fibrinous exudate enmeshing red blood cells, degenerating neutrophilic leukocytes and large pigment laden macrophages. Large bronchi show desquamation of the lining epithelium, edema, congestion and infiltration of the wall with leukocytes, plasma cells, and monocytes. Lymph nodes from the hilum of the lung show edema, congestion and hyperplasia.

The liver is fairly uniformly involved. The parenchymal cells are almost entirely destroyed except at the periphery of the lobule where some are greatly swollen and some have fused into eosinophilic masses. There is considerable collapse of the supporting framework. The sinusoids are tortuous and widely dilated. Inflammatory reaction is minimal but a few plasma cells, monocytes and neutrocytes are scattered about. The Kupfer cells are swollen and heavily laden with bile. Many are filled with light golden brown pigment. There is no evidence of fibrosis or "bile thrombi."

Mesenteric and portal nodes are diffusely edematous and exhibit some reticulum hyperplasia. Sections of the brain are within normal limits, except for the presence of a few scattered lymphocytes beneath the pia mater. All sections show congestion, edema and diffuse hyperplasia. Pancreas, gastro-intestinal tract, adrenals, genito-

urinary tract and bone marrow are within normal limits.

* * * * *

In less severe cases there are all gradations of damage. Dible, McMichall and Sherlock⁷ have analyzed 56 cases of hepatitis by aspiration biopsy of the liver. Even mild cases of jaundice have significant disintegration of the parenchymal cells. The earliest autolysis is around the central vein where the liver cells are found to be swollen, with large nuclei. The disintegration may be so extensive that practically no visible liver cells remain. Some destroyed cells fuse into eosinophilic masses. Later, there is some increased cellularity of the portal areas with cells of the mononuclear class predominating. In less severe cases there is some aggregation of fibrils. Glycogen is usually well preserved. Fatty changes are minimal. In about one-third of the cases there is some bile-duct proliferation and in about the same percentage of cases there are "bile thrombi." Vascular changes are minimal except in chronic cases where an extensive endophlebitis may be found.^{15a}

A study of the regenerative phase is important in determining the prognosis in hepatitis. In cases which go on to recovery, the regenerative process is regular. The relatively intact reticular framework serves as a superstructure to rebuild the "liver city." Gradually the debris is hauled away by the macrophages, the parenchymal cells multiply by mitosis beginning at the periphery of the lobule, and in three to six weeks after jaundice has cleared the process is complete and "business goes on as usual." Residual fibrosis is rare. Lucké^{15b} found no significant residual scarring in 14 cases dying of incidental causes as late as 14 months after the onset of hepatitis. Dible and co-workers⁷ from punch-biopsy material taken 7 to 26 weeks after the onset of illness found that only 6 of their 56 cases had residual fibrosis. In cases in which death ensued in from two to five months, however, Lucké^{15a} describes an irregular almost tumor-like regenerative pattern. The newly formed parenchyma showed degenerative ischemic changes in some areas. Mann²⁰ concludes from observations on dogs that "the hepatic tissue that is restored after partial removal of the organ appears normal within a short period after the process of restoration has ceased and no alterations in any of its functions have been noted." I believe restoration after an uncomplicated case of hepatitis is similar.

Symptomatology

The symptom-complex of this disease may be divided into *general*, *local* and *fatal* phases. The

general symptoms usually begin before the icterus and carry over into the recovery period. They begin most commonly two to seven days before the onset of jaundice and are those of any infectious disease, namely, headache, malaise, weakness (70 per cent), facile sweating, joint pains, chilly sensations, anorexia (77 per cent), nausea (58 per cent), and vomiting (20 per cent).²⁴ A coryza of varying severity occurred in 48 of the 85 cases in this series. The general symptoms increase in severity until the fourth to seventh day after appearance of jaundice at which time the patient begins to feel stronger and more hungry. The appetite increases with clearing of the jaundice, but fatiguability persists. While the jaundice is deepening it is easy to keep the patient in bed because of the profundity of his exhaustion. When the jaundice begins to clear, he feels better and begs to get up but finds upon doing so that he breaks out in profuse perspiration and is exhausted merely upon walking across the room. Indeed, it is usually two to three weeks after the jaundice has completely cleared that the patient is his old self again. The end of this period corresponds with the disappearance of microscopic evidence of liver damage. A recurrence of any of the general symptoms during the clearing of the jaundice should make the physician suspicious of an exacerbation. Such recurrence may follow alcoholic imbibition, undue exertion or for no obvious reason. Recurrence brings with it deeper and longer lasting jaundice and more severe liver damage.

Some time early in the course of the disease, symptoms appear which center the attention of the diagnostician on the liver. A dull, aching distress appears in the epigastrium and right upper quadrant. It is usually of greatest intensity and persistence just to the right of the mid-line in the epigastrium and is aggravated by body motion, breathing, and eating. Shoulder radiation is rare. At times there is distress in the left upper quadrant suggesting splenic enlargement. Narcotics are rarely necessary for relief of pain. The jaundice may vary in severity and may even be absent. I believe that if one looks often enough he can almost always find icteric sclerae. The duration of the jaundice may be less than two or more than eight weeks, the average being 30 to 45 days in the present series. Pruritis is minimal. Dark urine may be one of the initial symptoms. Hemorrhages from the gums are rare.

At some time during the "usual" course of the disease a dramatic set of symptoms may ensue, ushering in a fatal outcome. The interval between the onset of jaundice and the appearance of

these "hepatectomy" symptoms may be one week to five months. The description of one case follows:

Patient No. 1. A 21 year old male entered a station hospital in England on March 13, 1945, complaining of shaking chills, headache, weakness and generalized aching. Past history was uninformative except for a hospitalization on January 7, 1945 for concussion suffered as a result of artillery fire. He had had a chronic cough since February, 1945.

On March 13 he was seized with the complaints mentioned on entry. On the fifteenth he developed a moderately severe pain in the right lower chest thought to be pleurisy. On the eighteenth this note was made: "Patient still running low grade fever. Appears icteric this a. m. and has epigastric tenderness but liver not palpable. Still complains of generalized aching."

On the nineteenth the patient was transferred to a General Hospital. On admission the most unusual symptom was his restlessness and irritability. He criticized everything, then apologized later, saying:

"I am sorry if I was a little rude because I am pretty sick."

Then he would doze off. That evening he sank into coma, became hyperexcitable, tried to pull the curtains down and kept calling for "Eddie." Toward the morning of the twentieth, he was impossible to arouse. The slightest movement of his body would cause him to begin groaning and tossing about in bed. When the nurses bathed him, his legs went into clonus. Later in the day of the twentieth he developed Cheyne-Stokes respiration, a terminal fever of 105 F. and died early in the morning of the twenty-first after a seven or eight day illness.

These symptoms are typical of the three cases observed and reminded me of the symptoms which Mann describes in his hepatectomized dogs. The patient seems fairly well until he is suddenly seized by increased irritability, and restlessness. Coma then ensues with startling rapidity. The type of coma suggests organic involvement of the central nervous system, but the mild degree of cellular infiltration of the meninges described in such cases^{15a} probably does not account for the symptoms.

Physical Findings

There are no "sine qua non" signs of hepatitis. Even jaundice may be absent. However, the diagnosis of hepatitis without jaundice is difficult indeed.

Several general signs are commonly present. (1) The picture of weakness is so profound that

the ordinary physical examination tires the patient considerably. (2) Fever of 100-101 F. is present for two or three days early in the course of the disease. If the temperature goes higher, one must watch for signs of Weil's or cholecystic disease. In the terminal phases of acute necrotizing hepatitis, however, the temperature reaches extreme levels. (3) A bradycardia of 50-70 may be due to the depressing action of bile salts on the cardiac muscle. (4) Respiration is rarely affected in the milder cases, but rapid shallow breathing and Cheyne-Stokes respirations usually usher out a fatal case.

The liver was enlarged in 34 out of the 85 cases in this series. The enlargement is in direct relation to the severity and duration of the jaundice. In the "typical case" the organ is palpable one or two finger-breadths below the costal margin in the mid-clavicular line. The edge is round, tender, and difficult to palpate. The tenderness and spasm of the rectus muscle often precludes palpation of the liver edge in the right epigastrium. Pathologic reports^{15a} occasionally mention a difference between involvement of the right and left lobes, but not with enough regularity to substantiate a clinical impression often gained that the left lobe is more involved than the right. The size of the liver usually diminishes rapidly in the second to third week of the disease, and if death occurs at this time the liver may be less than half its normal weight.

The spleen was palpable in 10 of the 85 cases in this series. It is often felt with difficulty and only for a few days. It is tender when enlarged. Some authors have commented on the lack of tenderness of the spleen in infectious mononucleosis. If this be true, presence of splenic tenderness may be a differential point between the two diseases.

Lymph nodes are commonly enlarged particularly in the posterior cervical chain. The nodes are soft and discrete. The involvement of the lymphatic system indicates the generalized nature of the infectious process.

Bleeding phenomena and spider telangiectasia are rarely noted.

Laboratory

Laboratory studies in hepatitis afford an excellent opportunity for reviewing our knowledge of liver function.

I. Routine blood counts:

Red cell counts, red cell morphology and hemoglobin are not affected in most cases. Turner and co-workers²⁴ found that only 13 of 4,083 cases developed a notable anemia. This anemia

was macrocytic and was found only in severe cases. The white blood cell counts are usually low. In 152 counts recorded by Findlay and co-workers⁹ 47 per cent were at or below 6,000 per cu. mm. of blood. It is unusual for the count to be above 15,000 per cu. mm. of blood. Absolute and relative lymphocytes are prevalent, occurring in 22 of 62 cases in this series. The lymphocytes are often large, having vacuolated cytoplasm, and are indistinguishable from the cells found in infectious mononucleosis.

II. Urine analysis:

Increased amounts of urobilin and urobilinogen are often found in the urine before clinical jaundice appears. The occurrence of these substances in excess in the urine indicates that the jaundice is not due to complete obstruction of the biliary passages. Traces of albumen are commonly present during the acute phases of the disease.

III. Stool analysis:

The stool is rarely completely acholic.

IV. Blood chemistry:

A. Bile pigments:

I believe that the bile pigments must be increased in the blood or urine before a diagnosis of hepatitis can be made. The best method of assay in the blood is the quantitative serum bilirubin. The Van den Bergh reaction is direct, indicating that the jaundice is not of the hemolytic variety.

B. Serum protein:

In moderately severe and severe cases the serum albumen-globulin ratio is frequently reversed. The globulin is increased at the expense of the albumen, so that the total serum protein may not be awry. Turner and co-workers²⁴ found 28 per cent of severely ill patients had an elevated serum globulin. In the present series of ten analyses on moderately ill patients AG ratios were upset in 4. This type of disturbance is common in any type of liver damage. Since the liver is the principal source of serum albumen, it is easy to understand its decrease in hepatitis. The increase of serum globulin, however, is more difficult to explain, unless it be on an extrahepatic basis.

C. Blood urea and nonprotein nitrogen:

In terminal stages of cirrhosis, the blood urea is often high, presumably as a result of an hepatorenal injury. In severe cases of hepatitis and in dehepatized dogs the blood urea is normal or low, whereas the blood nonprotein nitrogen is elevated. This apparent discrepancy is due to the fact that extrahepatic protein waste products are not converted to urea as they are when the liver is func-

tioning properly.¹⁹ The only critically ill patient so tested in this series had a urea nitrogen of 21 mgm. per 100 cc. of blood and a nonprotein nitrogen of 75 mgm. per 100 cc. of blood.

D. Blood sugar:

When a patient with hepatitis sinks into coma before death the blood sugar values are low because "the liver is the sole or main source of sugar in the blood."¹⁹ Blood sugar values were 48 and 46 mgm. per 100 cc. of plasma in two of the cases in this series. Intravenous injection of glucose apparently failed to affect the course of the disease in either case. In hepatectomized dogs, however, Mann¹⁹ has found that intravenous administration of glucose prolongs life for a few hours.

E. Cholesterol:

There is no valid evidence that the liver produces cholesterol. No determinations of blood cholesterol were made in this series. Held and Goldbloom¹² mention, however, that total and esterified cholesterol are diminished in hepatitis and that the latter fraction may disappear entirely. Neefe and co-workers¹⁶ conclude, however, that abnormal values are not found with enough regularity to make this determination of much clinical worth. Blood lipids may be dramatically increased in acute obstructive jaundice, but no such increase has been reported in hepatitis.

F. Sedimentation rate:

Fink and Blumberg⁸ claim that the sedimentation rate is "almost invariably elevated after the first week." However, Findlay and co-workers⁹ state that the sedimentation rate shows no characteristic change. Neefe and co-workers¹⁶ agree that the sedimentation rate is a test of only moderate value. The impression gained from the present series was similar to that of McArthur¹⁸ who in 11 cases found 6 elevated sedimentation rates. He suggests that bile in the serum may produce an alteration in surface tension of the red cell, thus increasing the sedimentation rate; were this true, all jaundiced patients would have an elevated sedimentation rate. Best and Taylor² conclude that the most likely cause of increased sedimentation rate is an alteration in serum globulin or fibrinogen. The former is frequently disturbed in hepatitis.

G. Prothrombin:

Facilities were not available for performing prothrombin determinations in the present series. However, the only bleeding of note was found at autopsy. Turner and co-workers²⁴ found an extreme uncorrectable prolongation of prothrombin time in fatal cases. Neefe and co-workers¹⁶ consider prothrombin activity frequently disturbed in

hepatitis. This would be understandable as the liver produces prothrombin.

H. Serum phosphatase:

Examinations for this constituent were not performed in this series. However, others have found a rather constant elevation of serum phosphatase. Such elevation may be explained on the basis of faulty excretion by a damaged liver.

V. Liver Function Tests:

A. Cephalin-flocculation ("cephalin-cholesterol," "Hanger's Test"):

This test involves the flocculation of a cephalin-cholesterol mixture with human plasma in cases which have a disturbance in serum-globulin²⁴. It is a sensitive test, requires scrupulous adherence to precautions, and if done correctly is a most valuable aid. It was positive in 22 of 31 cases in this series. I do not agree with those who use an abnormal cephalin-flocculation test as the sole criterion for the diagnosis of hepatitis.

B. Bromsulfalein excretion:

Neefe and co-workers¹⁶ found this one of the most reliable of liver function tests in hepatitis.

C. Hippuric acid:

The test for the ability of the liver to synthesize hippuric acid from benzoic acid and glycine has been quite disappointing. Only 1 out of 11 cases in this series had an abnormal test. Neefe and co-workers¹⁶ list the hippuric acid test as being one of minimal value in hepatitis. I believe this to be the consensus in spite of Gordon's statement¹⁰ that "evidence of impaired function of the liver of from 37 per cent to 72 per cent of normal was found in all cases."

D. Miscellaneous:

Other liver function tests with the possible exception of the thymol turbidity test have not proven of enough value in hepatitis to warrant their use.

The most valuable tests in mild or moderately severe cases are: (1) tests for bilemia; (2) white blood cell and differential count; (3) urine analysis for bile pigments in absence of visible jaundice; (4) total and fractional serum protein; (5) cephalin-cholesterol (Hanger's) test. In serious cases blood sugar, nonprotein nitrogen, prothrombin time, and total and fractional cholesterol determinations may be of value.

Differential Diagnosis

During an epidemic of hepatitis one must be on the alert for other causes of jaundice. Infectious mononucleosis is occasionally accompanied by jaundice. In the presence of jaundice, lymphocytosis and splenomegaly, one must rely

upon a positive heterophile agglutination over 1:56 in order to make a diagnosis of infectious mononucleosis. Cholecystitis is rare in the age group in which hepatitis is prevalent; yet if pain is severe enough to require morphine, if the leukocyte count is elevated, or if the jaundice is recurrent, a roentgenogram of the gall bladder is indicated after the jaundice subsided. In the present series of 85 cases cholelithiasis was found in two instances. If jaundice fails to regress in three weeks one must think of stone, tumor or cirrhosis. In hemolytic jaundice the red cells are abnormally fragile and the Van den Bergh test is indirect. Weil's disease was not encountered in this series, although the British reported cases from Normandy after the invasion. One must find spirochetes in the blood or urine or a positive agglutination test in order to make the diagnosis of Weil's disease. Chronic malaria rarely produces jaundice and atabrine discoloration of the skin is not reflected in the sclerae.

Treatment

The treatment of hepatitis is simple. One need not insist on rigid medication or dietary regimes. Rest is the cardinal principle. Complete bed rest is essential while jaundice is increasing. However, it is not necessary to insist upon complete bed rest until jaundice has disappeared. As the jaundice clears, the physician may allow bathroom privileges and later may allow the patient to sit in a chair. But as restrictions on activity are gradually lessened, it must be emphasized that fatigue must be avoided at all cost. *If the patient begins to feel tired, he should go to bed.* The common sense of the individual plus the strict surveillance of the doctor is needed to insure this rule. If the patient is allowed to "kick up his heels" and leave the confines of his house or hospital ward before jaundice has disappeared, a severe exacerbation may result. Strenuous activity should not be permitted until three weeks after the jaundice has completely disappeared.

The importance of diet has been overemphasized. It is sufficient to rely on a qualitatively high protein, high carbohydrate, low fat diet. In dogs and rats Mann²⁰ and Bollman³ have shown that a high protein diet is detrimental in acute liver damage, since it increases the load on the liver cells. Actually, in hepatitis, the acutely ill patient can not be forced to eat a high protein diet, and I believe he should not be given parenteral amino acid or protein supplements while jaundice is deepening. However, with improvement, he wants and should be given a high protein diet. Bollman³ found that regenerative changes in the dam-

aged liver are most marked in animals receiving a diet high in protein. However, in practice, Darmady⁶ found no difference in the recuperatory period of patients receiving a control diet and those receiving a high protein diet.

The value of a high carbohydrate diet has been thoroughly established. It may be necessary to give parenteral glucose if the patient is not eating. One or two injections usually suffice.

Experiments on animals indicate^{3, 20} that liver regeneration is retarded by a diet high in fat. Stringent restriction of fat, however, renders the diet unpalatable. Hence the intake of carbohydrate and protein suffer. Small amounts of cream and butter in the recovery period will increase caloric consumption.

Vitamin therapy has also been overemphasized. There is no good evidence that vitamins of any sort are beneficial in hepatitis. Certainly the early enthusiasm for methionine has cooled.^{13, 27} There is no indication for flooding the system with vitamins. However, as the liver is an important storehouse and manufacturing plant for vitamins, there is justification for giving perhaps two or three times the maintenance dose of vitamins. Vitamin C may be given in fruit juice, and vitamins A, B, and D in capsules. Administration of vitamin K is not rational.

Prognosis

Due to the remarkable regenerative power of the liver, hepatitis clears in 95 per cent of cases without sequelae. Jaundice disappears in the majority of cases in two to three weeks. Lucke^{215b} and Dible and co-workers⁷ have found the liver parenchyma to be normal about three weeks after jaundice has disappeared. This period corresponds with the clinical return of normal vigor.

Three types of patients must be considered further.

(1) Those with recurrent jaundice—in about 2 per cent of cases²⁸ there is an exacerbation associated with deeper and more prolonged jaundice, and larger, more damaged livers. Such cases usually recover after a one to three months' period. If cirrhosis be a sequel to hepatitis, it should be in this type of case.

(2) Those with residual symptoms—Benjamin and Hoyt¹ studied 200 patients manifesting delayed convalescence five to nine months following post vaccinal (yellow fever) hepatitis. Their complaints were: weakness, fatigability, vague right upper quadrant pain, anorexia, indigestion, nausea and vomiting, backache, anxiety and nervous irritability. Group A consisted of 39 patients, clinically well, who needed rehabilitation only.

Group B consisted of 94 patients with moderate symptoms. Four of these showed hepatic dysfunction by liver tests, 19 per cent had palpable, tender livers. Group C consisted of 30 cases of neurosis aggravated by disease. Group D consisted of 37 cases manifesting extreme exhaustion. Punch-biopsies of the liver in two of these cases were normal. Diagnosis of psychoneurosis was made in 115 of 135 psychiatric consultations. Twelve per cent of all cases showed residual liver disease as evidenced by dye retention tests.

(3) Fatal cases—Death may occur in ten days to five months after onset of illness.

Summary

Beneath the surface of apparent benignity in hepatitis lies a background of surprisingly profound destruction of the liver parenchyma. This rapid destruction and ensuing restoration of the liver parenchyma offers an excellent opportunity for study of physiologic processes of the liver. All known testable functions may be disturbed at one time or another. In mild cases tests of greatest value are white blood cell and differential counts, a test for concentration of bile pigments in the blood, and a cephalin-cholesterol flocculation test. In more severe cases, a multitude of other examinations may be ordered. Among the most informative are total and fractional serum protein, blood sugar, blood nonprotein nitrogen, prothrombin time, blood phosphatase, red blood cell sedimentation rate, total and fractional blood cholesterol, and bromsulphalein excretion tests. About 95 per cent of patients recover without residual. Of the remaining 5 per cent some may die; some may have recurrence of jaundice; and some may have residual symptoms, the majority of which are psychogenic. Rest is the main principle in treatment. Heavy exertion should not be permitted until two to three weeks after complete clearing of jaundice. Diet should be qualitatively high in protein (except in acute phase), high in carbohydrate, and low in fat. Vitamins should be given in two to three times normal daily requirement. Studies are in progress throughout the world which should further clarify this most interesting disease.

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AN EVALUATION OF ALLERGY IN GENERAL PRACTICE

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No subspecialty in medicine is more misunderstood than is allergy. On the one extreme, we have a group of men who feel that allergists are little more than "needle pushers." (Unfortunately, some pseudo-allergists merit such a title.) Another, and still too large a group, have become imbued with the impression that allergy represents a convenient term to label numerous conditions that don't readily fall into other categories. They constantly attempt to place new and unwarranted symptoms and conditions under allergy. Such

misuse has led to many failures and resulted in skepticism by the general practitioner. Finally, there is a group that, although aware of the limitations of this field, is at the same time cognizant of its clarifying influence on certain illnesses which previously were not at all understood. They consider the allergist as a skilled internist who utilizes available allergy information just as he does bacteriology. Allergic diseases, after all, constitute a group as distinct in their etiology as do the bacterial diseases. Just as we must study bacteriology to understand infectious diseases, so we must study allergy to understand conditions such as asthma, hay fever and eczema. The occurrence and distribution of allergens is as pertinent in the management of asthma as is the knowledge of the life cycle of malaria or of hookworm in the management of these diseases.

My purpose in this presentation is to remove the hokus-pokus impression which so frequently accompanies scientific allergy discussions. It is a non-technical common sense approach to the problem.

The numerous manifestations of allergy present an important problem in diagnosis and treatment in all branches of medicine. Almost any structure in the body may be involved. The general practitioner deals with all the variations. The specialist may see only those which are concerned with his particular field. The rhinologist has the problem of vasomotor rhinitis and hay fever. Does the patient actually have constant head colds? Or is it an allergy? Is the sinusitis purely infectious, or is there an allergic background? Failure to realize the latter resulted in much unsuccessful sinus surgery.

The ophthalmologist meets with vernal conjunctivitis and iritis. The dermatologist repeatedly sees allergic conditions such as eczema and urticaria. Coal tar ointment as well as many other local applications are of little value unless the underlying allergy is uncovered. The pediatrician manages instances of asthma, eczema, and food intolerances. Without allergy he too is helpless in his approach to these problems. The gastroenterologist deals with innumerable instances of nausea, vomiting, abdominal cramps, or diarrhea—the so-called abdominal migraine—again a manifestation of allergy. In the domain of surgery, the recognition of certain forms of abdominal pain as a manifestation of allergy rather than surgical disease will prevent many a serious diagnostic error. The neurologist is faced with the problem of migraine, and attacks of loss of consciousness are occasionally allergic in origin. The orthopedist may have to know something about allergy in

order to distinguish allergic joint conditions. All of these require an understanding of allergy for their correct evaluation. Many other clinical entities such as Henoch's purpura, periarteritis nodosa, and ulcerative colitis, although not allergy problems per se, nevertheless may have allergic components.

For all practical purposes, all the various clinical entities may be considered as merely symptoms or manifestations of one disease. The only difference between them is that they affect different portions of the body. The causes, the diagnosis, as well as the treatment, are essentially the same for all.

First of all, what is allergy? The word is derived from the Greek words "ergas" meaning power or might and "all" meaning different. All-Ergas means different power. A more literal translation means altered reactivity. In other words, the person reacts differently from others as well as differently from himself at a previous time. For instance, a group will go on a picnic and eat contaminated food. All will become ill with dysentery. That same group may eat strawberries. Here they react differently. Some will show no ill effects; others will develop severe reactions. The latter is an example of an allergic response. Whereas all people react almost identically to most injurious agents, to allergic stimuli, only a few will show any deleterious responses. They demonstrate "altered reactivity." Why such should be the case is not known. Many hypotheses are present. Changes in the autonomic nervous system, defects in the structure of the blood vessels or in smooth muscle reactivity, endocrine disturbances and faulty chemical make-up as well as psychosomatic influences have all been expounded. Perhaps none or all will prove to be the correct approach. What is known, however, is that the condition is hereditary. The stronger the hereditary influence, the earlier in life are allergy symptoms likely to appear.

The many forms in which it may manifest itself have already been mentioned. A complete discussion of each is beyond the scope of this paper.

Confronted with a case suggesting allergy, what course should one pursue? Too often symptomatic therapy is administered and that is all. Although the importance of even temporary palliation should not be underestimated, good medical care desires a more lasting effect.

An exhaustive history is the single most important diagnostic aid. Is there a family history of allergy? At what age and under what circumstances did symptoms appear? Are symptoms seasonal or perennial? What aggravating or al-

leviating influences were noted? Are there any peculiar occupational exposures? Does the patient have cats, dogs or other pets? At times, one is unable to elicit a comprehensive history and must personally inspect the patient's environment for possible clues.

The second procedure is a thorough physical examination. To quote Chevalier Jackson, "Not all that wheezes is asthma," nor are all periodic headaches due to an allergic migraine, nor are abdominal cramps necessarily allergic in origin. It is elementary that all organic disease must be ruled out.

Finally, and it is advisedly that I place this last, one should do allergy tests. Unfortunately, this is too frequently considered of primary importance. Many patients with suspected allergy are given tests and then treated on a basis of such findings only. It is like treating for pneumonia every case with pneumococci in the sputum without other confirmatory evidence of the significance of such bacteriologic information. Allergy tests are confirmatory only—and lest we forget, are of limited value. One may use scratch, intracutaneous, patch, passive transfer or any of the many other tests. All have advantages and disadvantages. None is particularly difficult and can be performed by any doctor. The doctor who assumes such a responsibility, however, should have a broad understanding of associated botanical information. Without that his decisions are based upon meaningless mechanical readings. Tests indicate only whether the skin is sensitive to the allergen applied. Therein lies the fallacy—the degree and type of skin sensitivity may bear no relationship to the allergy elsewhere. Under many circumstances, the findings are diagnostic. At other times they are entirely misleading. This is particularly true of tests with food extracts. The skin findings can be so deceptive as to be of little value here. One may obtain negative tests in the presence of indisputable clinical evidence of guilt, and conversely obtain positive tests with substances which have no bearing on the case. The clinical correlation of the survey findings is the important factor and depends upon wide experience. It is the intelligent integration of tests with the clinical picture that permits rational therapy.

Other laboratory studies such as the leukopenic index and nasal smears for eosinophils are occasionally helpful. At times all tests may be unrevealing. This is particularly true in the ingestant type of allergy. Here one must employ rigid elimination diets to determine the offending substances.

Many such dietary regimes are described in current texts.

The real test of the evaluation depends upon clinical verification of the relationship between the suspected allergen and the symptoms produced. If an infant has a chronic dermatitis but no positive allergy tests yet the former disappears with elimination of milk, orange juice, or what have you, and reappears when ingestion is resumed, the relationship is unmistakable. On the other hand, if skin tests show positive reactions to timothy yet a patient in Iowa experiences hay fever only in the fall, our knowledge of the fact that timothy does not pollinate during the fall season immediately excludes it as a cause of the symptoms. These are only several frequently seen examples indicating the necessity of realizing the limitations of skin tests. I have seen many patients treated with multiple extracts when only ragweed was necessary, simply because skin tests showed numerous positives. Conversely a patient with positive skin tests to ragweed will obtain no relief if the chest symptoms are being caused by a lung cancer.

Having arrived at a diagnosis and the likely cause, one may expect good but not complete results from treatment. The percentage of improvement will vary with different allergic states, but in general, are well worth-while. In hay fever, about 75 per cent control of symptoms can be expected. Along with the specific therapy, any and all symptomatic medications should also be employed.

Specific allergic management is obtained in several ways. If the offending allergen can be eliminated, then the simple expedient of so doing completely controls all symptoms. For instance, if the youngster's asthma is being caused by a pet dog, the removal of the latter cures the respiratory distress. If chicken feathers are the cause of a persistent rhinitis, merely removing pillows from his room may be the answer. When the offending substance can be found and disposed of, elimination is the simplest approach.

Many allergens, however, are not amenable to elimination. Try as one might, it is impossible to eliminate many of the inhalants—pollens for instance. Mechanical devices to filter the pollen have been devised but are unsatisfactory in many respects. Moving to different environments may not be feasible because of financial reasons. For the large group of allergens that cannot be avoided, control is attempted by desensitization. This consists of administering gradually increasing doses of the suspected allergen. In other words, one is vaccinating them against such a substance. The

underlying theory is that the body contains two types of antibodies, those "fixed" or attached to the shock organ and those "free" or circulating in the blood stream. Desensitization therapy increases the circulating antibodies which in turn neutralize or "block" the arrival of the offending absorbed allergen at the cell surface of the shock organ. It is supposedly this latter attachment which results in undue symptoms. Naturally, to be successful, one must treat with the proper extract. Timothy hayfever will not improve with Russian thistle desensitization any more than vaccination for smallpox will protect against diphtheria.

Such desensitization can be performed in many ways. The usual procedure for the inhalant group is by hypodermic injections. This may be done seasonally, preseasonally or perennially. The latter, of course, offers the best result. In this connection, I should like to emphasize that more poor results are attributable to overtreatment than to undertreatment. Correct dosage determination comes with clinical experience and must be individualized in every case.

This cursory survey of the field of allergy is certainly not complete. Its presentation should, however, serve as a guide to the correct approach to this problem. It is granted that present information about allergy is fragmentary. The proper utilization of those fragments will, however, give definite aid to a large group of patients who cannot be controlled in any other way.

LIGATION OF THE DUCTUS ARTERIOSUS WITH A SUPERIMPOSED SUB-ACUTE BACTERIAL ENDOCARDITIS

Report of a Case Treated Successfully by Ligation

Edward J. Drew, M.D., Des Moines

The ductus arteriosus, or duct of Botalli, is normally present in embryonic life to shunt the blood from the pulmonary aorta to the systemic aorta. This is present because it is unnecessary to oxygenate the fetal blood. The first case of successful ligation of the duct of Botalli was reported by Gross in 1939, and so far 139 cases have been reported in the literature. Thirty-three of the cases were infected, that is, they had a superimposed subacute bacterial endocarditis; twenty of the cases were successful; there were five operative deaths; and fever persisted after operation in eight cases. This gives a 60 per cent apparent success in a condition in which a 100 per cent mortality could previously be ex-

pected. One case complicated by a superimposed subacute bacterial endocarditis underwent ligation in this institution.

Case Reported

P.S., a 16 year old white female, was admitted to the Medical Service of the University Hospitals on May 20, 1945. Her entrance complaint was "heart trouble" since the age of three, and chills and fever since February, 1945. When the patient was three years of age her mother had noticed that her heart was beating more rapidly than normal, and the cardiac contractions were visible externally. She was taken to her physician and was advised that she ultimately would outgrow the condition. She had always been short of breath and found it necessary to sleep on two or three pillows. Two years before admission the patient had noticed sharp pain over her left chest which was aggravated by activity. The pain was

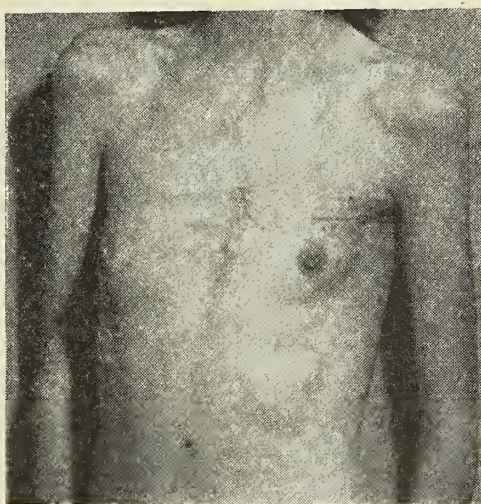


Fig. 1. Picture of patient fifteen days following ligation of ductus arteriosus.

also present during periods of rest. In February, 1945, the patient developed what was diagnosed as the "flu." This was accompanied by general malaise, fever, and chills. She developed severe pains in her precordium and a constant pain which she described as being deep in her chest. There was no ankle edema, but her fingertips became blue and her shortness of breath became worse. The patient lost twenty pounds in weight. She had rapidly gone downhill in the two months preceding admission. She had chills almost every day and her temperature would occasionally reach 103 F. She denied having purpuric spots and hematuria. She had been on digitalis, gr. 1½ per day.

Physical examination at the time of admission showed a poorly developed, poorly nourished girl who appeared ill. Her skin was warm and moist and no petechiae or eruptive dermatoses were noted. Her head, eyes, ears, and nose were negative. The lungs were normal to percussion and auscultation although the breath sounds were obscured by the cardiac murmurs. Examination of her heart revealed a precordial diastolic thrill and an increased impulse to palpation. The left border extended 2 cms. lateral to the midclavicular line in the fifth interspace. A machinery-like murmur was heard in the pulmonic area, and this obliterated all other cardiac sounds. The pulse rate was 95 per minute. The blood pressure was systolic 125 mms. of mercury, and the diastolic blood pressure could not be recorded. Pistol shot sounds were heard over all peripheral arteries. A capillary pulse was noted in the nail beds. The abdomen was essentially normal although the liver was two finger breadths below the costal margin. The spleen was not palpable at the time of admission. There was some left costovertebral angle tenderness. The pelvis was normal and the extremities were negative.

The impression at the time of admission was that the patient had a congenital cardiac defect, probably a patent ductus arteriosus, in addition to a superimposed subacute bacterial endocarditis.

Three days following admission the spleen became palpable. It was smooth, firm, and somewhat tender; blood cultures taken the eighth and ninth days following admission were positive for alpha hemolytic streptococcus. The patient was placed on penicillin with little clinical change. Her fever continued to rise to 102 to 103 F. every day. The precordial pain became progressively worse, and movement of the left arm aggravated the discomfort. The patient had no cough or hemoptysis but was constantly short of breath and apprehensive. Nineteen days following admission the patient developed a pulmonary infarct. Râles and friction rub were heard in the left base.

The patient was seen in consultation by the Department of Surgery on June 16, 1945, and ligation of the ductus arteriosus was recommended. The patient was transferred to the Department of Surgery on June 17 and the following day the ductus was ligated.* The chest was opened by an incision between the anterior third and fourth ribs. The left lung was adherent to the anterior chest wall at the site of the previous pulmonary infarct. It was necessary to free the lung from the adherent thoracic wall by sharp dissection. The ductus arteriosus was identified and ligated with two ligatures of heavy braided silk. The

patient withstood the operation without undue incident and returned to her room in good condition.

Postoperatively, the left chest was aspirated each day and from 400 to 600 cc. of serosanguineous fluid were aspirated for the first four days postoperatively. One hundred thousand units of penicillin were instilled into the left thoracic cavity each day during the first five postoperative days. Her temperature remained between 99 and 101 F. for the first twelve postoperative days, after which it was normal. Repeated blood cultures taken following the operation were all negative. The patient's blood pressure postoperatively was

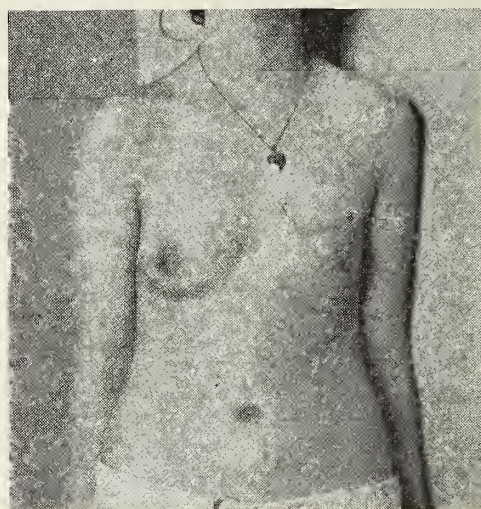


Fig. 2. Picture of patient seven months following ligation of ductus arteriosus.

124/78. She continued to improve and was transferred back to the Medical Service on July 6. Examination of the chest by x-ray revealed the heart shadow to be smaller and her pulmonary markings normal. A laryngoscopic examination done on July 12 revealed a paralysis of the left vocal cord. The patient made steady clinical and symptomatic improvement and was discharged from the hospital on July 18.

The patient returned to the hospital on Jan. 17, 1946 for a routine examination. Examination of her heart showed the "machinery-like" murmur to be absent. There was a slight irregularity of rhythm and some premature beats. The cardiac rate was 74 per minute. Blood pressure was 115/80. The patient's electrocardiogram readings had always been reported as normal. The patient had gained 60 pounds in weight. She was able to participate in all the physical educational activities of her high school class and had been

*Operation was performed by E. L. Besser, M.D., University Hospitals, Iowa City.

ice skating for the first time in her life. The general improvement was very dramatic and the patient appeared to be in perfectly normal physical condition for a girl of her age.

Comments

In the past, most internists and pediatricians have regarded a patent ductus arteriosus as a relatively innocuous condition and have been reluctant to recommend surgical therapy. Instances are common in which individuals have gone through labor and even lived to the sixth and seventh decades without apparent cardiac embarrassment. However, a recent comprehensive survey of this disorder by Shapiro and Keys of Minneapolis necessitates a complete re-evaluation of this abnormality. Although the lesion may be innocuous to many people, their studies reveal that 80 per cent of patients with a patent ductus arteriosus succumb to their cardiac lesion. In reviewing 50 cases it was found that if a patient is alive at the age of 17, the average age at death would be 35. The causes of death are 40 per cent bacterial endocarditis, 58 per cent cardiac failure, and 2 per cent rupture of the pulmonary artery or the ductus. Surgery seems advisable in the majority of patients with a ductus arteriosus, with or without subacute bacterial endocarditis. In the latter cases, surgery affords more than a forlorn hope. An uninfected patient can't expect a normal life span and may expect to develop endocarditis. Operation in bacterial endocarditis with a patent ductus arteriosus should be done as soon as the diagnosis is established. A delay in operation makes the duct more friable and the operation more difficult. Vegetations on the heart valves may persist after the duct is divided. Ligation in uninfected cases obviates the possibility of heart failure and decreases the probability of developing bacterial endocarditis. The incidence of endocarditis is greatest in the 'teens and in the third decade of life. The rapidity of recovery from surgery in young patients is remarkable.

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TUBERCULOSIS OF THE BREAST

Mark C. Wheelock, M.D., Mt. Pleasant

Because of the writer's impression that tuberculosis of the breast is an uncommon entity the question was asked of a number of surgeons of wide experience concerning the cases which they had seen. Each replied that it was very infrequent in his own practice. Most indicated that they had not seen the lesion.

The literature was then scanned for pertinent data. One of the first articles consulted said that for every 50 cases of carcinoma of the breast one of tuberculosis occurred. Another gave a ratio of one to forty. Both of these were thought to be inaccurate. On this basis a more intensive search was made which laid the ground work for the present summary and case report.

Virchow, in his "Treatise on Tumors" published in 1865, stated that "tuberculosis never occurs in the breast." Actually the condition was described in 1829 by Astley Cooper. In 1860 Lancereaux first proved the existence microscopically, and in 1868 Cuneo injected material from a tuberculous mastitis into a guinea pig with a positive result.

Since then there have been approximately 500 cases reported of which only a fourth have been proved by the demonstration of the organism in the fixed tissue, by culture, and/or by the production of the disease in guinea pigs.

At the present most reports of isolated cases are made in the Spanish literature or, if in the United States, in the clinics or hospitals of the south. Although the bacillus is considered to be of the bovine type, the disease is described rarely in the Middle West.

Since 1938, when a new method of cross indexing was instituted at the University Hospitals in Iowa City, there have been two proved cases of tuberculosis of the breast. In both of these there was an underlying pulmonary tuberculosis, and one of the women has already died from the progression of involvement.

The present report is from the surgical service of Burlington Hospital.

W.W.C. was a white 54 year old farmer's wife who was admitted to the hospital on Sept. 11, 1946, because of swelling in the right breast which developed following an injury. A few weeks before, when stooping over to pick up eggs, she had bruised the mamma against a wooden post. Shortly afterwards the breast became red, sore, and swollen. At this time no axillary lymph node

enlargement was noted. She was treated by cold wet packs until Sept. 23, 1946, at which time a soft fluctuant focus was incised. This was followed by two x-ray exposures of 300 r on succeeding days. One leukocyte count at the time of entrance was 10,000. Until the time of surgical drainage there was a daily rise in temperature to 100 F. This subsided after evacuation. She was discharged on Sept. 25, 1946, with persistent sinus at the operative site.

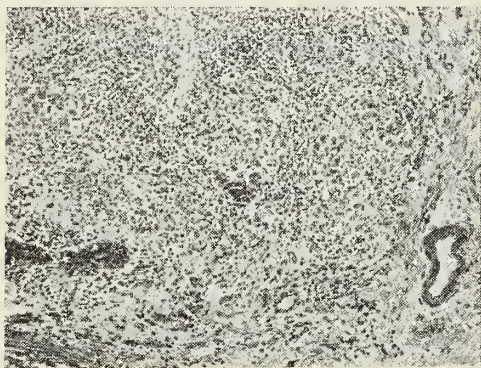


Fig. 1. Hematoxylin and eosin stain with formalin-mercuric chloride fixation. Magnification, 139 times.

Because of persistent exudation at the operative site she was readmitted Oct. 27, 1946, and on the following day a radical mastectomy was performed. This was carried out because of the sinus and the presence of two firm fixed tumor masses in the breast with associated enlarged axillary lymph nodes. The postoperative course was uneventful, and she was discharged on Nov. 7, 1946, with the wound completely healed.

The pathologic examination of the breast showed a diffuse nodular tuberculous process with involvement of adjacent lymph nodes. Special stains showed the organisms in the tissues. They were also grown on Petroff's medium. A photomicrograph of a characteristic periductal tubercle is presented. The material has been reviewed and confirmed by several well known pathologists. A roentgenogram of the chest showed clear lung parenchyma.

Discussion

Interest around this subject is aroused by the infrequency of the condition, the difficulties encountered in diagnosis, and the determination of the portal of entry.

At the present most observers believe that tuberculosis of the breast occurs once for every hundred cases of carcinoma. This probably depends upon the locality.

Pregnancy and lactation are thought to be predisposing factors; thus, the age of occurrence is

between 20 and 45 or during the active reproductive period.

It is usually unilateral and rarely exists in association with carcinoma—28 out of 500 cases. In the presence of a sinus in the breast, a retracted nipple, a diffuse nodularity with increase of fibrous stroma and with enlarged lymph nodes, the condition should at least be considered in the differential diagnosis. The drainage from the sinus tract should be studied. Some confusion exists as to the frequency of an associated pulmonary tuberculosis. The consensus is that they are unrelated. The great majority show involvement of the regional lymph nodes.

The best therapy is radical mastectomy which results in complete recovery. There has been no report of a case which underwent spontaneous regression, nor of complications.

The most likely means of contamination is by direct invasion of the skin, the nipple, or the ducts.

There is some tendency to use the following pathologic classification:

1. Nodular—resembling numerous small adenomas.
2. Confluent—found in lactating breasts and resembling a wide spread chronic mastitis.
3. Scirrhus—an increased fibrous stroma with little caseation or sinus formation.
4. Miliary—extremely rare.

Conclusions

A case of tuberculosis of the breast is presented with a brief review of the important data known at the moment.

1. The condition is seen once for every 100 carcinomas.
2. The disease is unilateral and is rarely associated with carcinoma.
3. Tuberculosis of the breast is usually primary, develops by direct invasion, and usually involves the regional lymph nodes.
4. There is a greater predilection for colored women in the active reproductive period.
5. The disease does not undergo regression, has no complications, and is treated successfully by radical mastectomy.

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The photomicrograph was obtained through the courtesy of Dr. H. T. Karsner of Western Reserve University.

THE BALDRIDGE-BEYE PRIZE
AWARD THESIS
FOR 1946

The Rh Factor and Physiologic Jaundice
of the Newborn

Kirk McGuire, M.D., Iowa City

Halperin, Jacobi and Dubin¹ in a recent article suggested that physiologic jaundice of the newborn (Icterus Neonatorum) might be explained by a discrepancy in Rh factors between mother and child. Witebsky and Heide² have also suggested that Rh negative mothers should not nurse their Rh positive children because of the presence of agglutinins in the milk and the continuing hemolysis of the red blood cells of the child. This study was undertaken to clarify these hypotheses.

Since the Rh factor was discovered in 1940 by Landsteiner and Wiener,³ its important relationship to erythroblastosis fetalis has been augmented by Levine and co-workers.⁴⁻⁷ Through their data the etiology of this symptom-complex has been determined and may be summarized as follows: an Rh positive father and an Rh negative mother produce an Rh positive offspring; the mother (lacking the Rh agglutigen) is immunized by the cell-born agglutigen of the fetus, which, after entering the maternal circulation, stimulates the development of a serum-born anti Rh agglutinin. This anti Rh agglutinin then diffuses back into the fetal blood and causes hemolysis of the red blood cells of the fetus.

It is from this phenomenon of fetal hemolysis that the clinical signs and the pathologic changes of erythroblastosis develop. In attempting to compensate for this red blood cell destruction, the hematopoietic system undergoes a marked hyperplasia and infiltrates the bone marrow, liver, and spleen with erythroblastic tissue. Also areas of ectopic hematopoiesis are developed in the kidney, lung, liver, mesentary, and placenta. The peripheral blood reflects this hyperplasia by the presence of numerous nucleated red cells.

The clinical manifestations of Rh incompatibility are observed in three common clinical forms: (1) hydrops fetalis; (2) icterus gravis; and (3) congenital anemia of the newborn. Abortion in the early months of the pregnancy is also said to be on this basis in some cases. These clinical conditions in term-children have some features in common, namely severe macrocytic anemia with erythroblastosis, edema, jaundice and enlarged liver and spleen. The placenta shows edema and on microscopic examination shows erythroblasto-

sis. The amniotic fluid is often icteric. At autopsy a generalized erythroblastosis and hyperplastic and ectopic hematopoietic tissue is found.

The occurrence of Rh antibodies in the breast milk of an Rh negative mother who has given birth to a child suffering from erythroblastosis fetalis has been reported by Witesbsky and Heide.² It is obvious that the antibodies must be present in the serum before they appear in the breast milk as shown in their article. Such breast milk might constitute a contributory factor in continuing the destruction of the child's red blood cells even though the antibody titer diminishes rapidly during the first few days after birth.

It has been suggested that physiologic jaun-

TABLE I

BABY	ICTERIC INDEX		ERYTHROBLASTS/100 NUCLEATED CELLS		
	1st Day	3rd Day	1st Day	3rd Day	8th Day
Bi	6	10	1	0	0
We	6	10	1	0	0
Re	4	15	2	0	1
Dw	10	30	2	1	0
Ha	6	15	1	0	0
Sm	10	30	3	1	0
Ki	6	10	3	2	0
Su	6	10	1	1	1
Me	10	30	4	1	1
Bw	6	15	2	0	1
He	6	10	0	0	0
Br	4	6	3	2	2
De	10	60	7	4	2
Bor	6	10	2	1	1
La	4	30	2	1	1
Ko	6	15	2	2	0
Sw	4	10	1	1	0
Da	6	30	3	1	1
Ri	6	15	0	0	0
Kl	4	10	2	0	0
Gl	10	30	2	0	0
Yeg	4	10	2	1	0
Go	4	15	1	2	0
Mc	4	10	0	0	0
Yet	6	10	1	0	0
Bow	6	10	1	1	0
By	4	10	1	0	1
Lo	4	6	1	1	1
Mi	4	10	1	1	0
Hi	4	10	0	0	0

Erythroblast Count and Icteric
Index on 30 Consecutive Newborns

dice may represent borderline cases of erythroblastosis in which the addition of a small increment of hemolysin from the milk would be sufficient to produce clinical jaundice.

Experimental Procedure and Material Studied

For this project a series of thirty consecutive infants was studied. Within the first twenty-four hours of life a sample of the child's blood was obtained by means of a heel puncture and blood type, Rh determination, icterus index, stained smears for erythroblasts and red blood count was made. Icteric indices and smears were repeated on the third day of life, and on the eighth day a smear was taken. Additional information on the child included sex, birth weight, and placental weight. Five cubic centimeters of mother's blood was also examined for ABO blood typing, Rh and

TABLE II
Infants with Jaundice

Rh		NUMBER OF CASES	JAUNDICE OR HIGH ICTERIC INDEX*	JAUNDICE IN SIBLINGS
MOTHER	INFANT			
+	+	19	6	0
	-	6	3	0
-	+	4†	3	1
	-	1	1	0

*An icteric index of 15 or more is regarded as clinical jaundice.
†Detailed in Table III.

anti Rh tests. The mother's obstetric history and any history of jaundice or pallor in the other children was noted.

An Rh negative mother was found whose serum contained anti Rh factor. Her breasts were pumped and the milk fed to four Rh positive babies. Red blood cell count and hemoglobin determinations were made over a period of three days, in the middle of which the babies were given three feedings of this milk at four-hour intervals.

Results

The data obtained from these studies are recorded in Tables I through VI. Certain general observations are possible. Twenty-eight of the thirty babies showed an increase in icteric index. Two additional infants (Ba and Ne) showed only a questionable rise (from four to six units). The highest number of erythroblasts per 100 nucleated cells was 7. The ABO blood typing of mother and child was of no material aid in this study.

There were 13 infants who showed high icteric indices or were clinically jaundiced. Only three of these were Rh positive children born of Rh negative mothers (Table II). Also there was one Rh positive infant from an Rh negative mother who did not develop jaundice (Table II and We in Table III).

Thus while there were four infants showing Rh incompatibility only three (De, La, Ha, Tables II and III) developed jaundice that might be considered due to Rh incompatibility. Of these three, only Baby De seemed to fulfill most of the requirements for erythroblastotic jaundice—an Rh

positive fetus from an Rh negative mother, demonstrable anti Rh in mother's serum, jaundice, congenital anemia, and a history of jaundice in siblings. The only discrepancy was the low number of erythroblasts observed, 7/100 nucleated cells, and the low icteric index of 60.* Baby De was considered as a potential case of erythroblastosis fetalis before it was born on the basis of: (1) Rh positive father and Rh negative mother, and (2) the mother's nine previous conceptions, only three of whom were living, four having died of "jaundice." In the study of the records of the pregnancies and newborn deaths, it was observed that each of the infants succumbed to an organic lesion demonstrable at necropsy, and the erythroblastosis was either questionable or only contributory. Furthermore, two of the pregnancies terminated in miscarriages at three months. All of the infants were breast fed. The three living siblings (ages 8, 12, and 14) are Rh positive. Clinical jaundice was recorded in the last five pregnancies that went to term—none being noted in the first two (Table IV).

Breast milk from the mother of Baby De was fed to three Rh positive infants in the nursery at the time to determine whether the added small increment of anti Rh agglutinin via the breast milk would produce hemolysis or jaundice. No significant change in the number of red blood cells or hemoglobin level was observed in these infants 36 hours after final feeding (Table V).

While the above observations were being made, Baby De was on a cow's milk formula, and the red count and hemoglobin fell slowly but steadily to 2.60 m/c. mm. and 9.6 gm/100 cc. respectively (Table VI). On day nine the child was put to the breast and there seemed to be an accelerated drop in both red blood cell count and hemoglobin. Breast feeding was discontinued, and it appeared that the blood findings improved somewhat. One day later when the blood picture had improved, breast feeding was resumed. After 18 ounces*

*To be significant in the diagnosis of erythroblastosis the peripheral blood should contain more than 20/100 nucleated cells and the icteric index should be over 100 u/cc.

TABLE III
Rh Positive Babies from Rh Negative Mothers

BABY	SEX	ANTI Rh IN SERUM OF MOTHER	ICTERIC INDICES		JAUNDICE IN SIBLINGS	NUMBER OF SIBLINGS		PLACENTAL WT. 1/4 OF BIRTH WT.*	ERYTHROBLASTS/100 NUCLEATED CELLS		
			1st Day	3rd Day		Alive	Dead		1st Day	3rd Day	8th Day
We	M	No	6	10	No	3	1	No	1	0	0
De	F	Yes	10	60	Yes	3	6	No	7	4	2
La	M	No	4	30	No	2	1	No	2	1	1
Ha	F	No	6	15	No	5	0	No	1	0	0

*It is considered pathologic when the weight of the placenta is 25 per cent that of the fetus. Such a placenta is found in erythroblastosis fetalis where it is very large and edematous.

TABLE IV
Obstetric History of Mrs. De

NUMBER OF PREGNANCIES	SEX	LENGTH OF LIFE	FEEDING	HISTORY OF JAUNDICE	NECROPSY REPORTS	MISCELLANEOUS
1	F	3 Weeks	Breast	None	Bilat. Otitis Media; Bilat. Parotid Abscess; Septicemia; Strep. Meningitis	
2		Miscarriage at 3 Mo.				
3	M	Alive and Well	Breast	None		Rh Positive
4	M	Alive and Well	Breast	?		Rh Positive
5	M	8 Days	Breast	Yes	Anemia; Nephritis	Intermittent Cyanosis
(Twins)	F	8 Days	Breast	Yes	Pneumonia	Fever
6	M	8 Days	Breast	Yes	Hemorrhagic Disease of Newborn. Hem. Jaundice	Fever (103) Prothrombin Level 12%
7		Miscarriage at 3 Mo.				
8	M	7 Days	Breast	Yes	Septicemia	Fever (105). WBC 19000
9	F	Alive and Well	Breast	Yes		Rh Positive. Transfused on 8th Day. Erythroblasts.
10 Present Pt. De	F	Alive and Well	Breast	Yes		Rh positive Jaundice Transfused on 12th day-No Erythroblasts

had been ingested (8 feedings), the hemoglobin and the red blood count had fallen again. At this point the child was transfused with Rh negative blood bringing the hemoglobin to 12.0 gm/100 cc. and the red blood cells to 3.80 m/c.mm. Breast feeding was continued on schedule, and the infant received 28 ounces* more (10 feedings), and no further fall in blood values developed.

Interpretation and Discussion

Fifteen nucleated red blood cells per 100 nucleated cells are considered as the minimum for diagnosing erythroblastosis fetalis. Since the maximum number of nucleated red blood cells attained by any of the newborn was 7/100, it is evident that none of the infants warranted the diagnosis of erythroblastosis on this basis. Although ABO blood typing of mother and infant showed no correlation in this project, it is possible that in rare instances, ABO, HR or MN sensitivity may present a picture similar to that of the Rh complex.

Twenty-eight of the 30 infants demonstrated increased icteric indices from the first to the third day. Thirteen of the newborns were clinically jaundiced by the third day as shown in Table II. In only four cases was the RH relationship between mother and child such that it might serve as the etiologic basis for a rise in icteric index. For the other infants, then, some other explanation must be sought. It seems feasible to retain the old explanation of a decreased physiologic requirement for red blood cells postnatally as compared to the intrauterine environment. This theory suggests that in utero the fetus demands

many more red blood cells to maintain an adequate oxygen supply than it does after birth, when, as an air breather, adequate oxygenation can be provided by fewer red blood cells. The excess red blood cells are hemolyzed, producing rise in icteric index and jaundice that is so often evident by the third day. Individual variations as to the number of excess red blood cells hemolyzed and the rapidity of hemolysis may be the reason why the majority of babies escape clinical jaundice.

Baby We, Baby La, and Baby Ha (Table II) possessed Rh factors which were Rh positive while their mothers were negative. However, at no time was there demonstrated any of the clinical or laboratory findings of erythroblastosis fetalis—i. e., icteric indices of 100 or more, demonstrable anti agglutinin titer in the mothers' sera; edema of the placentas; excessive erythroblasts; positive family history.

It is probable that the three conditions necessary for the development of anti agglutinins in the fetal blood stream were lacking in these cases. (1) Fetal Rh elements must diffuse through the placenta and enter the maternal circulation. (2) The mother must be capable of producing agglutinins. (3) The agglutinins must diffuse back into the fetal circulation. Rh positive males mate with Rh negative females eleven times in one hundred, yet the observed incidence of erythroblastosis is only 4 per cent. In all probability one or more of these three factors operates to reduce the incidence of erythroblastosis fetalis below its calculated probable occurrence.

The situation regarding Baby De warranted careful consideration when it was discovered and as time progressed, for she did not fulfill all the criteria for the diagnosis of erythroblastosis fetalis.

*Determined by weighing the child before and after nursing.

The placenta showed no abnormality and weighed considerably less than 25 per cent of the baby. The icteric index at birth was only 10 u/100 cc. and 60 u/100 cc. on the third day. The red blood count dropped from 5.75 m/c.mm. at birth to 3.90 m/c.mm. at the end of the fourth day. At no time did blood smears show a diagnostic number of erythroblasts. The child did not show any edema. It seems probable that this baby had the congenital anemia variety of erythroblastosis even though many of the diagnostic criteria are missing. The

TABLE V
Rh Positive Babies Fed Breast Milk from Mother De With Anti Rh in Blood Serum

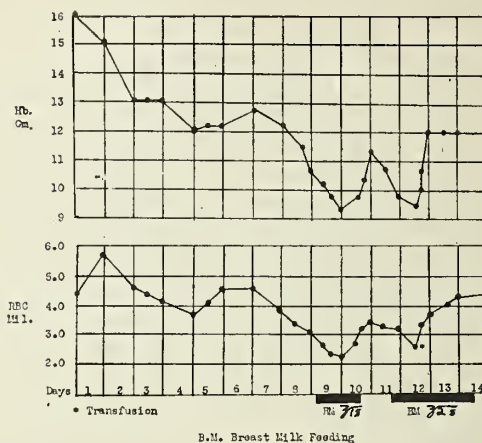
BABY		1st Day		2nd Day		3rd Day
		0900	2100	0900	2100	2100
Ko	Hb	16.0	16.0	16.0	18.0	17.0
	RBC	5.2	5.2	4.9	5.0	5.2
Ri	Hb	14.0	14.0	13.0	13.0	12.0
	RBC	4.9	4.5	4.5	4.6	5.2
Gl	Hb	16.0	16.0	15.9	15.8	16.4
	RBC	5.0	4.8	4.6	4.4	4.6

B.M. Breast Milk Feeding—3 Feedings

jaundice in this infant is within the range seen in the other children of the series and may be of the "physiologic" variety. On review of the family history of this baby it is probable that the siblings also had congenital anemia which debilitated the children rendering them more susceptible to infection.

The Rh positive infants who received breast milk from mother De (an Rh negative mother with anti Rh in the blood serum) showed no significant changes in the hemoglobin and red blood cells when compared to their normals. However, with Baby De the hemoglobin and red blood cells, which had been falling prior to the administration of breast milk formula, continued to drop. Preparations were made to transfuse it with Rh negative blood, but the transfusion was withheld when a repeat determination indicated the hemoglobin and red cells were rising. It was then decided to give another feeding of breast milk. No adverse effect on the blood was encountered; on the contrary, the count continued to rise. One day later breast milk formula was repeated, and, as before, the red blood count and hemoglobin had begun to diminish prior to the ingestion of the breast milk. When the hemoglobin again dropped to 9.4 gm./100 cc. and the red count 2.80 m/c.mm., it was felt clinically desirable to transfuse the infant; it received Rh negative blood. Breast milk feeding was continued, and for the next two days

TABLE VI
Blood Studies on Baby De



of hospitalization there was no change in the baby's red blood cells or hemoglobin.

Anti Rh agglutinins were found in the sera of only one of four women who might have been expected to show them. In this study we were unable to demonstrate by clinical evidence or laboratory tests that the anti Rh present in the blood sera appears in the breast milk in a sufficient amount to produce hemolysis when fed to an Rh positive infant.

Conclusion

1. This study fails to confirm the report of Halperin, Jacobi and Dubin that physiologic jaundice of the newborn is caused by Rh incompatibility between the mother and child. The jaundice which appears in the newborn approximately on the third day and which subsides spontaneously in seven to ten days appears independently of Rh discrepancy between mother and child and is presumed to be "physiologic."

2. Anti Rh agglutinins were not present in breast milk at such a titer as to contraindicate breast feeding even though such agglutinins were manifested in the maternal serum.

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College of Medicine
State University of Iowa
CLINICOPATHOLOGIC
CONFERENCE
January 20, 1947

Summary of Clinical Record

The patient first entered the University Hospitals in September, 1941, at which time he was 46 years old. Four years previously a purulent lesion had appeared on the medial aspect of his left foot. Two months later he had noted similar lesions on the right hand and elbow. He thought that these two latter lesions, as well as the ones which subsequently developed elsewhere, came at sites of injury to the skin. In the two years following the onset, the lesions on the foot, elbow and hand disappeared but new ones appeared on the upper lip, left side of the face, the neck, the tongue and the left thigh. In each instance the process began with the development of a small purulent lesion at a place of presumed trauma and slowly spread as it healed in the center. In spite of various local treatments the process spread continuously but slowly up to the time of admission. There was no pain or other symptom in the affected places.

Examination showed an extensive scar that extended from the center of the upper lip inferiorly over the lower lip and neck to the sternal end of the clavicle, posteriorly along the base of the neck for about 15 cm. and then superiorly to a region below the left ear, and anteriorly over the lower left side of the face to the upper lip. There were signs of active inflammation in the margin of the scar at the upper lip, mid-line of the neck and along the entire lower border. The active portion consisted of an elevated, dry, verrucous, granulomatous lesion which varied in width from 0.5 to 2.5 cm. The border was sloping and contained numerous tiny yellow abscesses from which pus could be expressed. On the postero-medial aspect of the left thigh there was a scar of larger size than the one on the face and neck. There was active inflammation in only a portion of its periphery, especially on the posterior part.

General examination showed no abnormalities except for an old injury of his right eye. His blood pressure was 124/80. Urinalysis was normal. The hemoglobin, white and red blood counts were also normal and his blood Wassermann test was negative. X-ray examination of the chest

revealed no lesions. Examination of a droplet of pus obtained from the small abscesses showed double-contoured, thick-walled bodies, some with a semi-round excrescence arising from the main body. These bodies were about 10 microns in diameter and were few in number.

From September, 1941, until September, 1946, the patient was seen frequently. During much of this time he received large doses of potassium iodide orally which seemed to cause some inhibition of the inflammatory process. At other times he was given neoarsphenamine, ultraviolet irradiation, and penicillin injections. In December, 1945, he complained of indefinite gastro-intestinal symptoms. X-ray examinations of the stomach revealed no abnormalities, and his symptoms were ascribed to intolerance to iodides.

The final entry to the hospital was September 17, 1946. Iodides were not given again because of the apparent intolerance. He again was seen by the internist for the gastric distress, which had continued in spite of the fact that he was receiving no iodides. X-ray examination showed a normal stomach and duodenal bulb with unusually prominent markings from the rugae in the stomach. The esophagus was not well visualized. On October 2 he began to complain of pain in his chest and seemed to be quite ill. Four days later he began to hiccough almost continuously and the

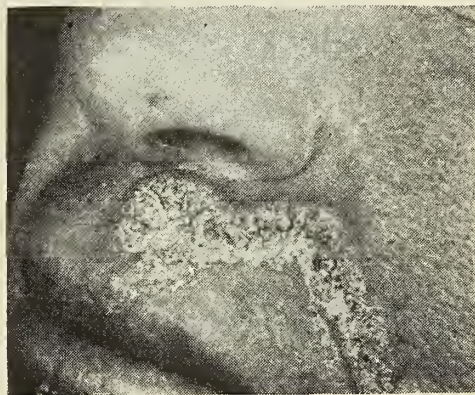


Fig. 1. Typical verrucous blastomycosis of upper lip.

next day he was disoriented, had urinary incontinence, and vomited occasionally. At this time an electrocardiogram showed evidence of posterior myocardial infarction and death two days later was attributed to coronary occlusion. His blood pressure on October 8 (the date of death) was 70/50.

Clinical Diagnosis

Blastomycosis cutis.

Myocardial infarction, recent.

lymph nodes. In addition, large numbers of *Histoplasma capsulatum* were found in sections of adrenals, and a few in the lungs and tracheobronchial lymph nodes. Both organisms were seen in phagocytes and giant cells. Budding forms of *Blastomyces* were noted. Both organisms were grown out in cultures of adrenal tissue.

There were apical foci of calcification, ossification and tubercle formation in the lungs. Acid fast stains of sections of the lung lesions failed to demonstrate tubercle bacilli.

Summary of Necropsy Findings

Chronic granulomatous skin lesions were noted on the face, neck, and left thigh. There were many mottled areas of depigmentation and hyperpigmentation over the face. The skin of the hands and forearms was diffusely hyperpigmented but this condition was not general. *Blastomyces dermatitidis* were found in granulation tissue and giant cells in the pustular lesions.

Similar chronic granulomata with caseation were found in prostate, right epididymis, lungs, hilar, retroperitoneal and mesenteric lymph nodes, and adrenals. The latter were represented by large masses of granulomatous tissue in which no remnants of adrenal cortex or medulla could be found.

Blastomyces organisms were found in sections of adrenal, prostate, epididymis, and abdominal

An active ulcer was present in the posterior wall of the duodenum 2 cm. below the pylorus. This had apparently bled into the bowel, for old clotted blood was found in considerable amounts in the stomach and small bowel. The mucosa of the lower colon was deeply pigmented with brown colored pigment. The pericardial sac was obliterated by old fibrous adhesions. However, there had been recent hemorrhage into the sac. No evidence of specific infection could be found. The coronary arteries were only mildly sclerotic, and were patent throughout. No infarcts of the myocardium could be demonstrated.

Necropsy Diagnoses

Blastomycosis cutis, chronic, with systemic involvement (adrenals, prostate, right epididymis and mesenteric and retroperitoneal lymph nodes).

Histoplasmosis involving adrenals, lungs and hilar lymph nodes.

Caseous necrosis of adrenals, extensive, due to *Blastomyces dermatitidis* and *Histoplasma capsulatum*.

Duodenal ulcer, chronic, active, with intraduodenal hemorrhage.

Pericardial adhesions, old, with recent hemorrhage.

Chronic passive congestion, lungs, liver and spleen.

Acute ulcerative esophagitis.

Adiposity of heart and pancreas.

Arteriosclerosis, generalized, mild.

Melanosis coli.

Corneal opacity, right eye.

Clinical Discussion

Dr. R. Nomland (Dermatology): This patient had localized lesions of blastomycosis, but even when the process is extensive one does not expect the disorder to spread to the internal organs. It is not always easy to differentiate systemic blastomycosis with secondary skin lesions from the localized variety with more than one area of involvement. Blastomycosis may arise from an internal focus and spread to many distant points, including the skin. Usually, abscess-like lesions appear which rupture and secondarily give rise to skin lesions, but sometimes the abscess is so small that it appears like a primary inoculation. Systemic blastomycosis is practically always fatal and cases in which there is activity for ten years, such as in this patient, are unknown.

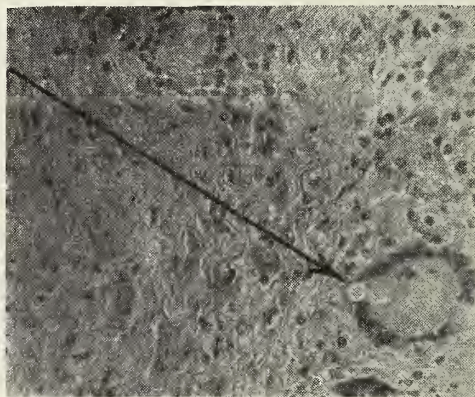


Fig. 2. Budding blastomycete in giant cell, from section of adrenal.

There was no evidence of bone or lung involvement which invariably occur in systemic blastomycosis. The involvement of the adrenals and other internal organs was entirely unexpected and must be extremely rare in localized blastomycosis.

One of the most interesting features of this case was the manner of death. In retrospect, it is easy to see that he died of acute adrenal insufficiency, which was caused by destruction and replacement of the adrenal glands by granulation tissue. The organism that chiefly involved the adrenal glands was *Histoplasma capsulatum*, an entirely unexpected finding, but blastomyces were also present. He had been seen several times by the internists but no blood pressure measurements were recorded because adrenal insufficiency apparently was not suspected. During the last few days of life his chief complaint was pain in the chest and the internists ascribed this

to a coronary occlusion, particularly as the electrocardiogram showed the typical findings of posterior myocardial infarction.

Dr. L. E. January (Internal Medicine): This electrocardiogram falls within the acceptable criteria for a posterior myocardial infarction, namely, significant depression of the S-T segments in Leads I and IV, elevation of the S-T segment in Lead III, a negative T₃ and slurring of the QRS complexes in all leads. The electrocardiographic patterns associated with myocardial infarction, due to occlusion of the coronary arteries in various locations, are well known and their accuracy has been proved. The alterations of the electrocardiogram in myocardial infarction are due to currents of injury arising from the ischemic muscle.

In this case the above interpretation of the electrocardiogram was incorrect. A chronic pericarditis, which had caused no clinical evidence of disturbed circulation, was found at autopsy. This explains the abnormal electrocardiogram. The electrocardiographic patterns of a chronic pericarditis are not nearly so characteristic as those of acute pericarditis. The changes in either case result from currents of injury arising in the damaged areas of subepi-

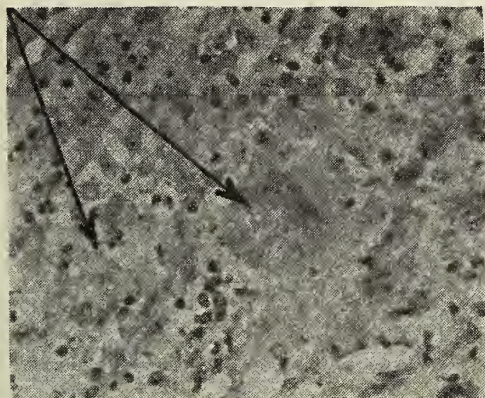


Fig. 3. Section of adrenal showing numerous cells parasitized by *Histoplasma capsulatum*.

cardial muscle. The changes are therefore similar to those seen in myocardial infarction. A localized pericarditis can produce an electrocardiographic pattern indistinguishable from that of infarction.

There were two other conditions in this patient which theoretically at least could alter the electrocardiogram. He was in shock at the time the tracing was made, and he had adrenal insufficiency. He must therefore have had an elevated serum potassium. We know that nearly fifty conditions other than actual cardiac disease will alter the electrocardiogram. Therefore, whenever an electrocardiographic interpretation is not consistent with the clinical situation, other conditions should be considered.

Dr. Nomland: The diagnosis of histoplasmosis of the adrenals was first made by Dr. McKee of the Department of Bacteriology on the basis of a positive

culture. He cultured material on mycologic media with the idea of demonstrating *Blastomyces*, but he was able to demonstrate that both organisms were present. When the *Histoplasma capsulatum* was found by culture, examination of the adrenal glands and other tissue showed the organism in typical fashion. I should like Dr. McKee to tell us a little about histoplasmosis.

Dr. A. P. McKee (Bacteriology): Darling¹ first described histoplasmosis as a disease in 1906. As a result of his studies he concluded that the infection was caused by a protozoon and named it *Histoplasma capsulatum*. Rocha-Lima² studied sections from Darling's early cases in 1912 and expressed skepticism concerning the nature of the causative agent. He believed the organisms more closely resembled yeast cells. De Monbruen³ and Hansmann and Schenken⁴ established the fungus nature of the disease in 1934. Conant⁵ studied the life cycle of this fungus in 1941, and concluded that the organism should be placed in the Moniliaceae of the Fungi Imperfecti.

Within the past few years the number of cases reported has increased considerably. Parsons and Zarafonitis⁶ reported 81 cases in January, 1945, which represents most of the cases occurring up to that date. If the results of the extensive skin-testing surveys that have been conducted recently are proved to be specifically indicative, histoplasmosis no longer could be considered uncommon.

Over one-third of the cases reported have been from the midwestern United States. Christie and Peterson⁷ found sensitivity in from 59.4 per cent to 83.9 per cent of those skin tested with histoplasmin (broth culture extract of the fungus) in Mississippi, Tennessee, Missouri and Kentucky.

There appear to be two peaks in age incidence, the higher during the first year of life and the second peak in the fifth through seventh decades. In adults the infection is apparently more common in males.

The exact portal of entry is unknown, but in view of the frequency of lesions in the gastro-intestinal tract and in the liver, spleen and mesenteric lymph nodes it has been suggested that the portal of entry is the gastro-intestinal tract. In addition, De Monbruen⁸ demonstrated the ability of the fungus to survive the gastric acidity of the dog's stomach. Occasionally the portal of entry appears to be cutaneous. Lung involvement is usually secondary to systemic invasion.

The causative agent is the fungus *Histoplasma capsulatum*. In the human or animal body the organism reproduces entirely by budding. The cells vary from 1 to 5 microns and are surrounded by a clear halo. When propagated on artificial culture media, the fungus appears in the "yeast phase" or "mold phase," depending upon the substrate and temperature used for cultivation.

The natural habitat of *Histoplasma capsulatum* remains unknown. No proof has been advanced to

demonstrate that man becomes infected from an animal host or vice versa.

Grossly and microscopically the lesions resemble tuberculosis, there being a chronic granulomatous type of reaction. Langhans' giant cells are not usually present. The distinguishing characteristic is the presence of *Histoplasma capsulatum* in large mononuclear cells. In ordinary hematoxylin and eosin stains the organism stains basophilic. The lesions are extremely widespread. It has not been uncommon for the adrenals to become involved, in which case the cortex or medulla may be affected. Other diseases may occur concomitantly with histoplasmosis. Most commonly, tuberculosis has illustrated this feature. This is believed to be the first case reported in which the patient suffered from both histoplasmosis and blastomycosis.

The incubation period is unknown. The onset is usually insidious. The duration of the disease may vary from a few weeks or months to several years. Young children rarely survive for more than a few weeks.

The symptoms in children tend to be more uniform than in adults, with gradual development of fever, digestive disturbances, diarrhea and loss of weight. There is almost always fever, and occasionally night sweats and chills. Progressive enlargement of liver and spleen with variable degrees of anemia and lymph node enlargement occur. Save for greater chronicity the same general pattern is seen in adults. When the portal of entry appears to be other than the digestive tract, hepatomegaly and splenomegaly are absent. Since the infection may be so widely disseminated the symptoms may be varied.

Moderate to severe hypochromic anemia is the rule. Consistent leukopenia has been present in about half of the reported cases. Blood smears may show the parasites in either the monocytes or polymorphs.

Prominent among a variety of conditions which might be confused with histoplasmosis are tubercu-

losis, Hodgkin's disease, aleukemic leukemia, and other blood dyscrasias and malignant neoplasms. The disease may mimic certain tropical parasitic maladies including leishmanian infections.

Peripheral blood, sternal bone marrow and fresh scrapings from ulcerative lesions of the nasal, oral or pharyngeal passages may be stained with Wright's or Giemsa's stain and examined directly. Monocytes and polymorphs should be searched for the presence of the fungus in its yeast phase. Examination of the peripheral blood directly by the above methods has been the least successful to date in establishing the diagnosis.

Histologic examination of biopsy material, including lymph nodes, sternal bone marrow and material obtained by splenic puncture, has been quite satisfactory in making the diagnosis.

Any of the above specimens are satisfactory for culture. Sputum and exudate from other areas also may be cultured. Demonstration of the typical tuberculate chlamydospores in culture renders an unequivocal diagnosis.

Material for culture should be streaked on blood agar, Sabouraud's agar and inoculated into dextrose infusion broth. Penicillin and streptomycin were also used in the present case to hold back the many contaminating bacteria. Cultures should be incubated at both 37 C. and room temperature and should not be discarded as negative sooner than one month. On blood agar the fungus develops as a yeast, reproducing by budding. On Sabouraud's agar at room temperature the fungus produces a fluffy growth, white at first then turning buff. Microscopically there are septate hyphae and small smooth spores (3 microns) arising directly from the hyphae or short stalks. Later in its development the fungus produces the typical tuberculate chlamydospores, which establish the diagnosis. These chlamydospores are three to five times as large as the spores and are covered with warty or finger-like projections.

A number of laboratory animals are susceptible to *Histoplasma capsulatum*. Injection of infected material as well as pure cultures intraperitoneally usually produce visceral involvement, from which the organisms can subsequently be recovered in the yeast phase.

Histoplasmin may aid in making the clinical diagnosis of the fungus infection, particularly in differentiating closely allied diseases. Much must be learned before the efficacy of hypersensitivity tests can be properly evaluated, as it has been shown that there is cross reaction between histoplasmin and a number of other fungus extracts.

In the past, histoplasmosis has been considered to be an invariably fatal infection. Conclusions as to prognosis may have to be altered if the widespread hypersensitivity to histoplasmin proves to be of a specific nature. If the latter proves to be true, then nonapparent infections must be widespread and fatal termination must be the exception rather than the rule.

Of the many types of treatment used in histoplas-

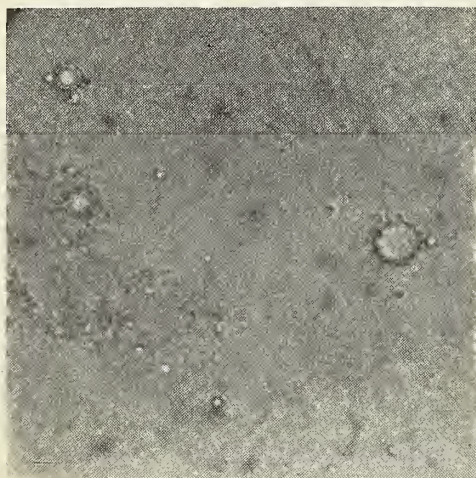


Fig. 4. A tuberculate chlamydospore from *Histoplasma capsulatum* cultured on Sabouraud's agar at room temperature. Note the finger-like processes extending from the spore.

mosis, none have altered the course of the disease except antimony preparations. To date, reports on the use of streptomycin have not been forthcoming. In the case presented at this conference the fungus was isolated in the presence of 10,000 units per milliliter of streptomycin.

In the case under consideration a piece of necrotic adrenal was used for mycologic examination. Direct examination of the exudate in saline revealed a moderate number of thick-walled budding cells 10 to 12 microns in diameter (*Blastomyces dermatitidis*). These findings were confirmed by the culture methods described earlier and by animal inoculation. Tuberculosis was ruled out by appropriate guinea pig inoculation.

Question: Is the organism like *Monilia* when it is picked up as a nonpathogen on routine cultures?

Dr. McKee: The parasite has never been found in nature but cases have been found in several animals, including rats, dogs and guinea pigs. The disorder is probably fairly common in the Midwest where it apparently causes calcification in the lung fields. In a study of a large group of people with calcified areas in the lungs, it was found that many of them had a negative skin reaction to tuberculin. It was discovered that some of this group had a positive reaction to histoplasmin and it has been assumed that an inapparent infection with this organism produces calcification in the lungs or hilar lymph nodes. No persons with such findings were encountered under the age of one year but the incidence increases rapidly from then up to 14 to 20 years of age, so it is presumed that the infection is acquired from natural sources not yet known.

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CORRECTION

The Journal regrets that the following errors appeared in the article, "Myocardial Infarction and/or Fatal Coronary Disease in Young Soldiers," by Harry B. Weinberg, M. D., Davenport, which was published in the February issue: In fig. 1 lead III should be IV F, CF 2 should be III, and IV F should be CF 2; in the text, fig. 7 should read fig. 3 and fig. 3 should read fig. 5; reversal of pictures in figs. 5 and 6. These errors will not appear in the reprints.

EXTENSION COURSE FOR MEDICAL RECORD LIBRARIANS

To meet the shortage of trained medical record librarians a course has been designed to give in-service instruction in the field. This extension course is directed by the Educational Board of the American Association of Medical Record Librarians and is conducted on a nation-wide basis. The in-service training of medical record librarians has been made possible by a grant of \$22,000 from the National Foundation of Infantile Paralysis.

Anyone employed in hospital or clinic records, and administrators interested in a better understanding of the record department are eligible to attend. Persons previously so employed who desire to take a refresher course will be accepted.

It is hoped that the program can be carried on for at least two years. Since the \$22,000 grant is not sufficient to maintain the course beyond the present schedule of 25 classes, a tuition fee of \$20 is charged. Any amount over actual expenses will be used for a correspondence course of continuing study for those persons who have had this training.

The class meets for five consecutive days. Students learn medical terminology, medical ethics and related subjects and how to use Standard Nomenclature of Disease and of Operations. They have practice periods and lectures additionally.

Twelve courses have been held in areas along the eastern coast. Future meetings are scheduled for Los Angeles, February 24-28; San Francisco, March 3-7; Portland, Oregon, March 10-14; Seattle, March 17-21; Omaha, March 24-28; Birmingham, April 14-18; Indianapolis, April 28-May 2; Detroit, May 12-16; Cleveland, May 19-23; Minneapolis, May 26-30 and Boston, June 9-13.

In addition to the in-service training grant, the National Foundation of Infantile Paralysis has given \$61,000 for scholarships to train new personnel as medical record librarians.

Miss Margaret C. Taylor, R.R.L., Director, School for Medical Record Librarians, Rochester General Hospital, Rochester, New York and past President, American Association of Medical Record Librarians, is field instructor.

"Enthusiasm for the course is growing," says Miss Taylor. "We have trained more than 400 persons in the in-service course to date, and hope to train many times that number before our schedule is completed."

JANUARY LICENTIATES

The following were licensed to practice medicine through reciprocity at the January meeting of the Board of Medical Examiners:

Frederick C. Brush, Shenandoah, Iowa.
 Manuel Brownstone, Sandstone, Minnesota.
 Lynn Dodge, Fairport, New York.
 Solomon Greenhill, Des Moines, Iowa.
 Herbert H. Kersten, Iowa City, Iowa.
 Josef R. Martin, Carroll, Iowa.
 Adrian R. Powell, Vinton, Iowa.

STATE DEPARTMENT OF HEALTH



Rapid Treatment of Syphilis

For several years the Iowa State Department of Health has maintained facilities in several counties in Iowa to which all physicians may refer patients for rapid treatment of syphilis. To date, the demands have exceeded expectation and it has been found necessary to adopt certain procedures to gain uniformity and be of maximum benefit to the patient. In adopting the following procedures we have followed the recommendations of the Iowa Committee for the Study of Venereal Diseases made on Jan. 23, 1947.

In general, all patients are to be referred by the physician to the hospital nearest him. There is no cost to the patient except that he must provide his own transportation to the hospital and return.

Type of case admitted for rapid treatment:

- (1) All primary syphilis, both seronegative and seropositive.
- (2) All secondary syphilis.
- (3) Early latent syphilis of not more than one year's duration.
- (4) All pregnancies regardless of stage of syphilis.

Method of admission:

(1) The physician referring the patient should make arrangements by letter or telephone with the medical director or his representative at the place nearest to him. A list of places where rapid treatment is available and whom to contact relative to admissions is given below. *Do not* send patients without first making arrangements for admission.

(2) It is requested that the physician provide the medical director with the diagnosis of the patient by stage of syphilis or duration of infection. This should include a brief resume of the history and physical examination and an outline of any previous treatment.

(3) It is requested that the physician provide the medical director with all the data obtained

from laboratory examinations such as blood serology and spinal fluid examinations.

Treatment control:

It is desired to follow all patients given rapid treatment for at least *one year*. The physician should make certain that the patient understands this from the beginning. Post-treatment follow-up will consist of: (1) quantitative blood serology *once each month* for one year; (2) detailed physical examination to be included with the quantitative serology *every three months* for one year; (3) the last detailed physical examination at the end of the year to include a spinal fluid examination.

The entire series of post-treatment examinations may be performed by the referring physician or, if so desired, the patient may return to the rapid treatment facility for this service. If at all possible, it is recommended that the quarterly examinations and particularly the last one (one year post-treatment) be made at the facility where rapid treatment was given.

Locations:

Following is a list of places where rapid treatment for syphilis is available:

- (1) Burlington (Mercy Hospital)

G. D. Jenkins, M.D., Farmers & Merchants Bank Building, Telephone 4803; Erwin C. Sage, Director, Des Moines County Health Department, 522 North 3rd Street, Telephone 2960.

- (2) Davenport (Scott County Isolation Hospital)

R. E. Jameson, M.D., Director, Venereal Disease Clinic, 2406 Marquette Street, Telephone 3-9010; Mrs. Ruth Martin, R.N., Superintendent, Scott County Isolation Hospital, 2406 Marquette Street, Telephone 2-2658.

- (3) Des Moines (Broadlawns General Hospital)

Leo R. Pearlman, M.D., Broadlawns General Hospital, 18th and Hickman Road. Telephone 4-7261, Ext. 44 on Mon., Wed., and Fri., 2-4

p. m.; Lucy Dippert, R.N., Broadlawns General Hospital, 18th and Hickman Road, Telephone 4-7261, Ext. 45, Dialy 1-5 p. m.

(4) Iowa City (University Hospitals)
Miss Ann Gordon, University Hospitals, Iowa City; Department of Dermatology and Syphilology, University Hospitals, Iowa City, Drs. Nomland, Carney, Shapiro or McGowan.

(5) Sioux City (St. Vincents or St. Joseph's Mercy Hospital)
John W. Bushnell, M.D., 333 Davidson Bldg., Telephone 8-5838; Agnes Foley Davis, R.N., City Health Dept., Telephone 8-0577; Helen McHale, Secy., City Health Dept., Telephone 8-0577.

Rheumatic Fever and Heart Disease

The American Heart Association and its Council on Rheumatic Fever announced that the week of February 9-15 would be observed as National Heart Week.

In the United States as a whole for the year 1945, acute rheumatic fever caused 1,341 deaths, a rate of 1.0 per 100,000 population. During the same year in Iowa 13 deaths were attributed directly to this cause, a rate of 0.5 per 100,000. Fatalities from chronic rheumatic diseases of the heart and from other causes of heart disease were much higher, as revealed by figures for Iowa and the country as a whole in the following table:

Type of Disease	1945		1945	
	United States No. of deaths	Rate per 100,000	Iowa No. of deaths	Rate per 100,000
Chronic rheumatic diseases of the heart	24,782	18.8	537	20.9
Coronary arteries and angina pectoris	181,437	99.6	3,377	131.4
All other forms of heart disease	268,109	203.2	4,173	162.3
All heart diseases—total.....	424,328	321.6	8,087	314.6

*Data furnished by the United States Public Health Service.

Subacute Bacterial Endocarditis

In a recent communication to the Commissioner, the Council on Rheumatic Fever of the American Heart Association directs special attention to the need for a program designed to aid in the care and prevention of subacute bacterial endocarditis. The Council's Medical Director, David D. Rutstein, M.D., prepared the following statement:

The American Council on Rheumatic Fever of the American Heart Association, at its last meeting, considered a series of reports which have been submitted to it concerning the excessive cost of penicillin for the treatment of certain patients suffering from subacute bacterial endocarditis. Those reports indicated that patients were being undertreated with penicillin because of the inability of the hospital in which the treatment was given

to afford the thousands of dollars which were required for the treatment of certain cases.

Precedents have been established in the past for the supply of expensive therapeutic agents through governmental agencies. Examples of these are type-specific antipneumococcus serum and arsphenamine.

After careful consideration of this matter, the American Council on Rheumatic Fever unanimously recommended that the seriousness of this situation be brought to the attention of the Surgeon-General of the U. S. Public Health Service, the Associate Chief of the Children's Bureau, and the health officers of all the states and larger cities with the recommendation that governmental funds be made available for the purchase of this drug in adequate amounts necessary for saving the lives of patients suffering from subacute bacterial endocarditis.

The Council also recommended that the attention of these agencies be called to the development of a program for the prevention of subacute bacterial endocarditis. This disease, caused by the alpha hemolytic streptococcus usually occurs in individuals with rheumatic or congenital heart disease. This micro-organism is normally found in the mouth and upper respiratory tract. It is known that bacteremia with this micro-organism follows the extraction of teeth or other operations on the teeth and upper respiratory tract and that almost half of the cases follow such operations. It is strongly recommended that penicillin or one of the sulfonamide drugs be administered prior to such operation and that patients suffering from rheumatic or congenital heart disease and physicians and dentists be informed of this fact.

MORBIDITY REPORT

Diseases	Jan. '47	Dec. '46	Jan. '46	
Diphtheria	5	13	18	Sac, Adair, Fayette, Buchanan, Polk
Scarlet Fever	129	117	207	Polk, Linn, Scott, Wapello
Typhoid Fever	1	0	4	O'Brien
Smallpox	0	1	0	.....
Measles	49	28	397	Appanoose, Dubuque, Johnson
Whooping Cough ..	36	91	39	Linn, Boone, Black Hawk, Scott
Brucellosis	45	43	6	Kossuth, Butler, Hamilton, Cedar
Chickenpox	435	388	142	Dubuque, Black Hawk, Linn, Johnson
German Measles ...	10	2	4	Dubuque, Scott, Allamakee
Influenza	1	2	59	Buena Vista
Malaria	3	4	70	Polk, Scott, Winnebago
Meningitis				
Meningococcus ..	10	2	11	Hardin, Woodbury
Mumps	70	88	149	Black Hawk, Clinton, Delaware, Woodbury
Pneumonia	19	11	27	Scattered, Black Hawk
Poliomyelitis	6	13	8	For the State
Tuberculosis	57	50	53	For the State
Gonorrhea	171	114	226	For the State
Syphilis	149	133	125	For the State

The JOURNAL of the Iowa State Medical Society

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America's Major Public Health Problem

For many years the sale of Christmas seals, the March of Dimes, and other well-directed publicity campaigns have kept the American people acutely aware of the dangers of tuberculosis, infantile paralysis, and cancer, and the results have been encouraging. However, more attention has been paid to these diseases and more money spent to combat them than their relative incidence justifies. They constitute an important, but nevertheless minor, aspect of our public health problem.

Our greatest menace is diseases of the heart and blood vessels, but until recently this fact has never been adequately emphasized. Cardiac and vascular diseases, including hypertension, kill three times as many people as cancer (which ranks second), six times as many as accidents, seven times as many as pneumonia, and ten times as many as tuberculosis. Furthermore, rheumatic heart disease kills and cripples twice as many children as poliomyelitis. During the second World War, in which approximately 325,000 Americans were killed as a result of enemy action, 2,000,000 persons in the United States succumbed to diseases of the heart and blood vessels. It is high time, therefore, that the whole nation focuses its attention on this problem, and perhaps National Heart Week, which was inaugurated Feb. 9, 1947, will go far toward achieving this goal. Let us hope so.

Designating "days" and "weeks" for this or that seems rather silly in some ways. For example, every day in the year is Mother's Day, not just a certain arbitrarily appointed day in May,

and the struggle to prevent and cure heart disease must go on constantly, not just from Feb. 9 to 15. On the other hand, no more effective way of informing and educating the public has ever been invented, and this extremely important end abundantly justifies the means.

In order to assist in the attainment of this goal, one of the leading insurance companies is conducting a special campaign on heart disease during the fall and winter months. At that time, the company's more than 20,000 field representatives, in cooperation with official and voluntary agencies, will reach the homes of millions of policyholders with a recently published pamphlet, YOUR HEART, developed in cooperation with the American Heart Association. A lay educational film on heart disease is also being prepared. Distribution will be made to physicians of a packet in which will be included material of special interest to doctors, and a scientific exhibit on heart disease, first shown at the meeting of the American Medical Association in San Francisco, is available for state and local professional meetings.

Easter Seal Campaign

The attention of the medical profession this month is called to the Easter Seal campaign now being conducted by the Iowa Society for Crippled Children and the Disabled. As physicians we are interested in the welfare of children, and many crippled children are helped to new life and hope through the sale of these Easter Seals and the work carried on by the Iowa Society. It offers unduplicated services but at the same time works closely with other state and private agencies and with members of the profession.

A model school for the education of the very young cerebral palsied (spastics) has been set up in Des Moines by the Society. There these unfortunate children are taught speech, group and individual play, muscular coordination, and the beginnings of academic instruction. They are taught to relax, and the services of a trained physical therapist are available. This school has the latest equipment.

The Society has made further valuable contributions through parent education and its program of home employment for disabled adults as well as its fight for special education. Its services are very broad and comprehensive. For instance, the Iowa Society and its affiliated County Societies maintain field representatives who go out through the state locating the crippled, advising and counseling them, and rendering services they need. The Society also maintains an outdoor camping program at Boone for crippled children and has

instituted a program of summer day camps in cities for children who are too severely handicapped to attend the Boone camp. In the summer of 1946, a large gift from the Society to the University of Iowa Speech Clinic made it possible for 47 additional children to get speech training.

The over-all program includes special education, tuition to private schools, legislation for a state hospital-school, corrective treatment, hearing aids, glasses, crutches, wheel chairs, artificial limbs, speech correction, and homebound employment for adults as well as many others for both children and adults. These services are made possible primarily through the sale of Easter Seals. Hence, it is with pride that we commend the people who are active in this campaign and urge all of our readers to buy Easter Seals.

Iowa Committee for the Study of Venereal Diseases

Late in 1946, Robert L. Parker, M.D., President of the Iowa State Medical Society, and Walter L. Bierring, M.D., Commissioner of Public Health, State Department of Health, appointed a joint scientific committee to be known as The Iowa Committee for the Study of Venereal Diseases. Members of the committee are: Ruben Nomland, M.D., Department of Dermatology and Syphology, University of Iowa, Iowa City, chairman; John W. Bushnell, M.D., Sioux City; F. H. Entz, M.D., Waterloo; G. V. Caughlan, M.D., Council Bluffs; R. E. Jameson, M.D., Davenport; Benjamin F. Wolverton, M.D., Cedar Rapids; R. M. Sorensen, M.D., Director, Division of Venereal Disease Control, State Department of Health, Des Moines.

The committee has for its purpose the primary function of acting as a clearing house for information on all phases of venereal disease diagnosis, treatment, and control, especially as these apply to the venereal disease situation in Iowa. All phases of venereal disease diagnosis, treatment, and control will be studied with a view toward making suggestions and recommendations to foster complete cooperation between the physicians of Iowa, the State Department of Health, the State University of Iowa College of Medicine, and other interested groups or agencies in order to obtain the ultimate in the scientific diagnosis, treatment, and control.

At the first meeting, held on Jan. 23, 1947, in the offices of the Commissioner of Public Health at the State Department of Health, it was recommended that the Iowa State Department of Health, through the facilities now in operation for the rapid treatment of syphilis, should institute uni-

form procedures so that proper evaluation of the effectiveness of treatment schedules could be made. A plan for the utilization of penicillin in oil and beeswax was worked out, but it was decided that it would be better to study it for a time before recommending its use by physicians for treatment of ambulatory cases.

Certain recommendations regarding the type of case eligible for admission to a hospital designated for rapid treatment and how the physician may go about getting a case admitted was made. An announcement concerning the above will be found on page 130 of the JOURNAL.

Announcements of suggestions and recommendations of this committee will be made from time to time. Results of all studies undertaken will be available to anyone interested. The committee earnestly desires to do all it can to help Iowa physicians with their venereal disease problems. Questions and suggestions from physicians will be welcomed and most helpful.

National Conference on Medical Service

The twentieth annual meeting of the National Conference on Medical Service was held in the Palmer House, Chicago, Feb. 9, 1947. Following immediately after the Rural Health Conference and discussing many of the same topics from the medical viewpoint, it was attended by a large group of physicians from all states. This conference is an expansion of the old Northwest Regional Conference which was started in St. Paul some twenty years ago. It has been a prime mover in many of the economic advances made by the American Medical Association.

This conference, being informal, has been able to keep up with and discuss the most pressing matters of medical service as they have arisen. It is interesting to note that ten years ago the meetings were largely a discussion of the best methods of providing medical care for the relief and medically indigent. As the conditions have changed, so have the topics discussed. This year, the major emphases were veterans' care, medical cooperatives, activities of the Council on Medical Service, and modern trends in medical practice.

The Veterans Bureau now has, for the first time, a Medical and Hospital Division whose sole purpose is to provide the best possible medical care for veterans. It is under medical control and has divorced itself from the former semi-military setup. There are no rules. The physician in the hospital is allowed to practice medicine without the interference of those of higher rank and with a minimum of time spent in paper work. The hospitals are providing a large number of

approved internships and residencies in the specialties, many of which are recognized as being adequate for credit toward a specialty board certification. There are plans on foot to set up special types of internships and residencies which will be planned to train a physician for the general practice of medicine.

The cooperative movement, which has been growing for many years, is rapidly branching out into the field of medicine on a consumer basis. The promoters do not seem to favor cooperatives in medicine on a commodity basis, though this is favored in agriculture. At present there are about ninety cooperative medical care plans in thirty states and the District of Columbia, covering over 500,000 people. Their general policy is to provide complete preventive medicine, care of illness, and hospitalization on a nonprofit, prepayment, consumer controlled plan. They are of the opinion that only group practice can furnish adequate medical care.

The Council on Medical Service reported on its activities through Dr. Joseph S. Lawrence who is in charge of the Washington, D. C., office. He discussed the various bills in Congress which are of special interest to the medical profession. Due to the urgency of tax and labor legislation, it is unlikely that any major legislation along health lines will be brought up and passed in the present session. There are proposals for governmental agencies in addition to those already in existence for the purpose of studying cancer and the degenerative diseases. The Hospital Survey and Construction Act as passed and Senate Bill No. 472 for subsidies to aid states in their education programs are of interest especially in that they include a new feature. In neither case is any federal agency permitted to have any control over the expenditure of the funds after the grant is made, for the operation of that program is left entirely to the state or local agency.

A very interesting panel discussion was held Sunday afternoon on "Modern Influences in Medical Practice." The trend toward what is considered by many as overemphasis on specialization was discussed from the standpoint of the undergraduate educational program and the internship training in hospitals. It was recommended by several speakers that part-time men be employed on the staffs of the medical colleges to give lectures on general practice and the economic factors of medical practice. In Colorado a program is already in progress under a committee from the medical school, the medical society, and the hospitals in which there is special preparation for general practice. This includes a one year rotating

internship, one half year in the outpatient clinic, and one half year in a rural type hospital. Similar plans are being considered by other medical schools.

The question of hospital staff organization, especially with reference to the position of the general practitioner on the staff, brought out an extensive discussion. The closed staff, with general limitation to board members, has caused much difficulty in many areas, particularly the larger cities. It seemed agreed that there was a definite place for the general practitioner to care for his own patients in the hospital. His field of practice could be as definitely outlined as that of the EENT or GU man, and within his field he could do as good work.

Discussion of some means of recognition for the general practitioner was indulged in by several men, most of whom were specialists. It seemed to the writer that their chief object was to throw some type of recognition as a sop to the egotism of the general practitioner. This may be unjust, but it seems that it would be better for the general practitioner to work out his own salvation. The specialty boards were organized by the men in the specialties in order to give the public some yardstick by which to judge whether or not a man had adequate training to qualify as a specialist. The general practitioner himself, if he feels that a similar need exists, should work out his own method for designation of those who have had adequate training for general practice and who have kept their knowledge up-to-date. If a Board or College of General Practice were established, it would still, without doubt, leave out a large group who would want specific classification. Suggestions have been made that state societies or other organizations officially recognize the men who have kept abreast of the advances in medicine as they apply to general practice. Attendance on formal postgraduate courses, refresher courses conducted in local areas, or proof of practical knowledge by periodic examinations could be made the bases for such certificates. These could be issued at intervals of two to five years and would be ample proof of the professional attainment of the physician.

The fundamental desire of the general practitioner as well as the specialist is that his patient receive the best possible medical care. Each man, be he specialist or general practitioner, must continue to study and advance; otherwise, his diploma, certificate, or membership in a college is of no importance. Medicine moves too fast for any certificate to mean much over any long period of time.

National Conference on Rural Health

The second annual meeting of the National Conference on Rural Health was held in Chicago, February 7 and 8, under the auspices of the Rural Health Committee of the American Medical Association. It was well attended by leaders of the various farm groups and by representatives of most of the state medical societies.

The program consisted of general discussions by leaders on Friday morning. These were followed by round-table meetings in the afternoon in which the various aspects of rural health and medical care were discussed. On Saturday morning the leaders of the round-table discussions reported the consensus of the opinions presented at the various meetings.

All groups were firmly in favor of improving the quality and availability of medical care for the rural population of the United States. There were some differences of opinion as to the best method of attaining the desired objective. It was agreed that the present major problems were: (1) maldistribution of medical personnel and facilities; (2) a trend for all medical students to feel that they must specialize in order to practice satisfactory medicine; (3) failure in making hospital and medical prepayment plans available in rural areas; (4) lack of health education, knowledge of preventive medicine, sanitation, and information as to facilities and services now available in many rural areas.

The scarcity of medical men in rural areas was given a great deal of consideration. With the changes which have occurred in rural life and organization, it will undoubtedly be impossible to have physicians in all the small villages which have had them in the past. There will be increased development of hospitals and health facilities in county seat and other larger towns so that those who live in the villages and rural areas will find it necessary to go to their trading center to secure medical services. The physicians will locate where there are health centers, hospitals, and diagnostic centers. However, this does not mean less adequate nor less available care. It is now easier to drive twenty miles to a hospital, health center, or doctor than it was to travel five miles to the nearest village twenty years ago. Furthermore, when the patient does arrive, he has better medical service available than ever before. We do not want poor medical service made more available. Convenience is of secondary importance.

It was generally felt that there is need for a greater emphasis in medical schools and hospitals on the dignity and value of the general practice of medicine as a profession. Suggestions were made

by professional representatives that no physician be permitted to specialize until he had spent three to five years in general practice. Internships in small hospitals and services in health centers might be added to the standard time spent in the approved hospitals. Many felt that externships, with general practitioners should be made available to the medical students between the junior and senior years. The emphasis placed on board certification by the army and the Veterans Bureau in rating medical men has had a great influence in leading doctors to feel that they must specialize.

With the possible exception of one speaker (who favored cooperatives first and governmental medicine second), the expressed opinion was that the present plans for prepayment of hospital and medical care on a voluntary basis would meet the major needs. It was also felt that there were groups for which it would be necessary to supplement the individual funds with tax funds. However, it would be better for the individual to be somewhat independent and carry as much of his own medical expense as his income would permit. The hospital and medical prepayment plans have been very slow in making their services available to rural areas. Efforts are being made along this line in most states, but as yet it seems to have been impossible to work out an enrolment plan which will include any large percentage of the rural population. Much publicity and intensive selling campaigns are necessary to make these programs effective in any area.

Almost every round-table group stressed the importance of state and county health associations as agencies to implement the program. It was felt that the farm, industrial, hospital, governmental, and medical groups should be represented and should make over-all plans. This group should also, on state and local levels, be the publicity agency to inform the public of the services available, the needs, and the best program for meeting the needs.

As a whole, the conference was a frank, open discussion by various groups. There was great divergence of opinion on some matters, but the airing of these differences without rancor was considered the first step toward removing them and the reaching of the best possible solution for the improvement of the rural health of the nation.

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NEWS NOTES

from the
Committee on Medical Service and Public Relations

NEW MEDICAL SERVICE DIRECTOR

Iowa Medical Service announces the appointment of Mr. Wilbur Quinn as executive director effective February 15. Since opening its office, the company has been fortunate in having the services of Mr. E. M. Kingery on a part time basis. Mr. Kingery has been executive secretary of the Polk County Medical Society for fifteen years and his background of medical knowledge and acquaintance with physicians has been most helpful to the company. However, when Iowa Medical Service agreed to administer the veterans' program, the decision meant that a full time director must be employed. Since the Polk County Society had prior claim to Mr. Kingery's services, we relinquished our part time demand on him with full understanding of the help he has been to us in the organization of the company.

Mr. Quinn is a veteran, a graduate of Iowa State College, with a business background which should enable him to fill the position of executive director capably and efficiently.

Administering the veterans' program has greatly increased the work in the office. Additional personnel has been obtained, and authorizations for examinations and treatments are going out daily to Iowa physicians. The list of participating physicians now numbers 1,616 names. This list is not a closed one; any doctor wishing to do this work may be enrolled by sending his name, address, age, and specialty to Iowa Medical Service. The ultimate aim of the program is to give every veteran the opportunity to go to his own physician.

In mapping operations, we try to visualize the procedure from the time the authority is mailed to the veteran to the final report by the attending physician. We are trying to keep the procedure as simple as possible, but actual operation may reveal flaws which did not appear in our planning. Hence, if any physician has a suggestion for the smoother functioning of the program, we invite his comment.

Martin I. Olsen, M.D.

BLUE CROSS DISTRICT MEETINGS

Five district meetings of the County Health Improvement Associations were held in January of this year. The first one was held in Des Moines with Dr. Martin I. Olsen as the luncheon speaker. Others were held in Oelwein, Cedar Rapids, Fairfield, and Creston. These county HIAs were organized to make it possible for self-employed groups of rural residents to qualify for the "group enrollment" regulations of the Blue Cross Plan.

All counties in the area serviced by Hospital Service, Inc., of Iowa except Cerro Gordo, Chickasaw, Floyd, Franklin and Mitchell have organized these health units—69 out of 74 counties. Crawford and Carroll counties in the northwestern part of the state, which are in the Associated Hospitals Service Incorporated area, have one each.

Polk County was the first to organize in June, 1944. Since that time, these county groups have enrolled over 85,000 rural members in Blue Cross. Last year interest was expressed in obtaining a prepayment plan for medical service in addition to the hospitalization plan. Four counties, Dallas, Hancock, Scott and Wright, have enrollment in Iowa Medical Service as well as the Blue Cross Plan.

In response to the increased interest of these groups to have the more complete prepayment program, the Iowa State Medical Society made arrangements to have the councilors and directors in each district present the aims, ideals and operations of Iowa Medical Service at these district meetings held in January. Dr. Felix A. Hennessy, introduced by Dr. Leslie L. Carr of West Union, spoke at the meeting in Oelwein. Dr. Clyde A. Boice of Washington, introduced by Dr. H. A. Housholder of Winthrop, gave the history of the plan at Cedar Rapids. Dr. I. N. Crow met with the group at Fairfield and Dr. H. E. Stroy of Osceola, who was introduced by Dr. James G. Macrae of Creston, explained the plan at Creston.

The stated purpose of the HIA is "to foster and promote all of the activities, endeavors and work of the Health Improvement Association of the county, and to promote, conduct, maintain,

and engage in additional work relating to the health of rural people in the county; and generally to promote, assist, organize and foster group activities relating to improved health and education." The prepayment health plans were the first programs sponsored. There is a desire to improve their organizations and increase their activities. Several projects have been discussed, most of them directly connected with hospital facilities and services. Support has been pledged for hospital legislation and the nurse recruitment campaign. One county is cooperating fully with the fly control program. Other counties are considering programs.

Officers of the Health Improvement Associations, state extension leaders and directors and Blue Cross staff members were in attendance at these meetings. Fifty-six counties out of 69 were represented in spite of unfavorable weather conditions.

FELLOWSHIPS FOR PHYSICIANS AND ENGINEERS

Announcement is made by Surgeon General Thomas Parran of the U. S. Public Health Service that applications for Fellowships in post-graduate public health training for physicians and engineers for the school year beginning in the fall of 1947 will be received at any time prior to May 1, 1947.

The Fellowships are made possible by a grant of \$228,400 from the National Foundation for Infantile Paralysis through funds contributed to its March of Dimes. Fifty-three students were awarded Fellowships for the school year beginning in September, 1946.

The Fellowships provide an academic year's graduate training of approximately nine months in an accredited school of public health or an acceptable school of sanitary engineering followed by three months of field training, and are open to men and women, citizens of the United States, under 45 years of age. Physician applicants must have completed at least a year's internship. Engineering graduates with a Bachelor's or higher degree in sanitary, civil or chemical engineering are eligible; those with other engineering degrees who have had experience in the public health or sanitary engineering field may also submit applications.

The specific purpose of the Fellowships is to aid in the recruitment of trained health officers, directors of special services, and engineers to help fill hundreds of vacancies existing in state and local health departments throughout the country. The Fellowships are intended for newcomers to the public health field, and are not open to employees of state and local health departments for whom federal grant-in-aid funds are already available to the states.

Applicants for Fellowships may secure further details by writing to the Surgeon General, U. S. Public Health Service, 19th and Constitution Avenue,

N. W., Washington 25, D. C., Attention Public Health Training.

ART CONTEST DEADLINE

May 1, 1947 is the deadline for entering the \$34,000 prize art contest on the special subject of "Courage and Devotion Beyond the Call of Duty" (on the part of physicians in war and in peace). This contest is open to all M. D.'s in the Western Hemisphere. The exhibition will take place in conjunction with the A. M. A. Centennial Session at Atlantic City, June 9-13, 1947. For complete information, write or wire now to Francis H. Redewill, M. D., Secretary, American Physicians Art Association, Flood Building, San Francisco, California, or to the sponsor, Mead Johnson & Company, Evansville 21, Ind., U. S. A.

AMERICAN ACADEMY OF ALLERGY

The American Academy of Allergy is holding a refresher course in Omaha, Neb., the week of May 19, 1947. The course will be given at the University of Nebraska, College of Medicine, and will be under the auspices of the Allergy Department.

The first day will cover hay fever; the second, allergic rhinitis; the third day, bronchial asthma; the fourth, allergic skin manifestations; and the fifth, other allergies. Complete details, including speakers and specific courses, appear on page xxix.

Attendance at these meetings is open to all practitioners of medicine in this section of the country but will be limited to 45 registrants. The charge for the course will be \$50. The course will begin each day at 8:30 A.M. and end at 5:30 P.M. with the exception of Tuesday and Thursday. On these days there will be an evening dinner meeting followed by round table discussions with questions asked from the audience. These dinners and round tables will be held at the Hotel Fontenelle, Omaha, Neb.

Arrangements for reservations have been made for the men attending this refresher course at the Hotel Fontenelle. Requests for further information regarding this course should be sent to: Office of the Dean, University of Nebraska, College of Medicine, 42nd and Dewey, Omaha, Neb.

UROLOGY AWARD

The American Urological Association offers an annual award "not to exceed \$500" for an essay (or essays) on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been in such specific practice for not more than five years and to residents in urology in recognized hospitals.

For full particulars write to the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee. Essays must be in his hands before May 1, 1947.

The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Statler, Buffalo, N. Y., June 30-July 3, 1947.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. MARION H. BRINKER, Jefferson

President-elect—MRS. FRED MOORE, Des Moines

Secretary—MRS. CHARLES A. NICOLL, Panora

Treasurer—MRS. HENRY G. DECKER, 2908 Woodland, Des Moines

DALLAS-GUTHRIE MEDICAL AUXILIARY

The Woman's Auxiliary to the Dallas-Guthrie Medical Society met with the doctors and enjoyed luncheon with the members of the Adel Rotary Club January 16, 1947. Following luncheon, the meeting was held at the library.

The meeting was called to order by the president-elect, Mrs. C. R. Osborn. Minutes of the last meeting were read and approved. Mrs. E. T. Warren reported seven subscriptions to *The Bulletin* in the Dallas-Guthrie Auxiliary. Mrs. A. G. Felter reported thirty-one subscriptions to *Hygeia*. Mrs. H. W. Smith reported that two parties had been given during the year.

Following reports, Mrs. H. W. Smith, president for 1947, took the chair and appointed committees. Projects for the year will be: (1) keeping informed on pending medical legislation; (2) increasing subscriptions to *Hygeia* and *The Bulletin*; (3) increasing membership; (4) cooperating with the State Auxiliary in its objectives and program; (5) maintaining social contacts through Auxiliary parties.

Mrs. K. M. Chapler gave a brief of plans for the state convention to be held at the Savery Hotel in Des Moines April 17 and 18.

Mrs. E. T. Warren gave a book review of Du Maurier's *The King's General* with emphasis on the psychological reaction of a cripple toward life and its problems.

Mrs. F. A. Wilke, Secretary

SELECTED ITEMS FROM THE NEWS LETTER OF THE COUNCIL ON MEDICAL SERVICE A.M.A., JANUARY 21, 1947

New National Legislation

Taft-Smith-Ball Bill: Rewritten. Will be introduced—suggestions in regard to changes in the original bill introduced in the last session of Congress have been made by several state medical societies—these have been submitted to the authors. It is understood that suggestions also have been received from dentists and hospital organizations. Some of the provisions suggested for inclusion in the new bill by the medical, hospital and dental groups are:

1. A new agency for administration of this legislation separate from the U. S. Public Health Service and the Federal Security Agency.

2. A "grass-roots" doctor to assist the administrator together with an advisory council predominately professional; both administrator and council to be appointed by the President.

3. The entire program to be based on plans submitted by states with a means test to be administered at the state level.

Reintroduction of Compulsory Insurance Legislation: President Truman has asked the New Congress to enact "a National Health Program" as presented a year ago. This would seem to reaffirm his position for compulsory sickness insurance. He also recommended the establishment of a Department of Welfare to include the fields of health, education and welfare.

Voluntary Prepayment Medical Care Plans Grow

Planning stage in most states is past—sound programs have been established enrolling almost five millions. Growth should be maintained for 1947 at the same rate as for 1946. This is going to take work—hard work, coordinated effort, and correlation of programs.

Woman's Auxiliary

In most states the Woman's Auxiliary is active and is doing a commendable job of civic and community welfare. The Woman's Auxiliaries throughout the country can do much to make 1947 a year of accomplishment. Some important subjects for their consideration are ten point program, child health, rural health problems, and supplying schools with compulsory sickness insurance debate material.

Drive of Cultists for Recognition

Following World War I through government aid many service men enrolled in cult schools. Indications are that a number of states have accredited these cult schools for training of returned veterans of World War II. This will mean that numbers of cultists will be turned out and will seek recognition from state legislatures to practice the healing art despite substandard educational qualifications. Several states report that these groups already have approached their legislators asking for special professional recognition, and being veterans, their appeal has special emotional flare.

BUENA VISTA MEDICAL AUXILIARY

At the December meeting of the Buena Vista Medical Auxiliary the following officers were elected: Mrs. A. J. Gran, Storm Lake, president; Mrs. R. E. Mailliard, Storm Lake, secretary-treasurer.

STUDENT NURSE DRIVE STARTS

The Iowa Hospital association started a campaign in a meeting held in Des Moines February 1 to raise \$10,000 for recruiting student nurses in the state.

The group will urge all Iowa hospitals to donate \$1.25 per bed and bassinet for the recruiting fund. Seventeen hospitals already have made contributions.

Present at the meeting to discuss the shortage of nurses were representatives of hospitals all over Iowa and members of the Iowa State League of Nursing Education, which is sponsoring the drive.

Paul Hanson, president-elect of the hospital group, presided. A discussion on the need for women to take nurse's training in Iowa was led by Mona Jackson, president of the Nursing Education League.

It was said that a nationwide nurse enrollment campaign now being conducted is not adaptable to Iowa's needs. To aid the recruiting drive, a vocational guidance film will be made available to high schools and civic and other groups. The cast of the motion picture playlet is made up of Iowa nursing students.—*Des Moines Register*, Feb. 2, 1947.

DISEASE HAS BECOME A WORLD PROBLEM

The necessity for world agencies to deal with social and economic problems these days is nowhere better demonstrated than in the field of disease control.

The Empire Scientific conference at Cambridge, England, called upon the United Nations to create an organization to combat diseases transmitted by aircraft. Such an agency would regulate inoculation against smallpox, typhus, yellow fever, and so on. It would be responsible for disinfestation of airplanes, and for sanitary measures at airports used in international traffic.

The vast network of airways spanning the world is largely a by-product of global warfare. Both military and civil aircraft were under strict Allied supervision. Disease areas were charted, rules for inoculation standardized, and manpower and materials provided to assure compliance.

With demobilization, these wartime controls are disappearing. Many local governments, especially those in "backward" regions where need for control is greatest, have neither the money nor the expert manpower to maintain adequate safeguards. International rules for spraying airplanes to kill mosquitoes which might be inside the aircraft often are neglected or only perfunctory.

Representatives from South Africa, where there

is deep concern over movement of yellow fever, point out that there is only one medical entomologist in the Union of South Africa.

When aircraft take off from an African airfield and land in the United States the following day, disease control no longer can be left to the initiative of individual nations. Carelessness at Casablanca is potentially more dangerous to an Iowan than a screen door standing open in his kitchen.

A step in this direction is being taken by the United Nations Economic and Social Council. The immediate task is to establish a worldwide organization capable of coping with problems of public health.

The long-range goal is establishment of great international laboratories at strategic points over the globe, with teams of the best scientific minds of all nations attacking the problems of cancer, tropical fevers, tuberculosis, and leprosy. The subject will be discussed when the United Nations General Assembly meets in September.

If the nations can learn to work together to improve public health—a field where nationalism and sovereignty are not such controversial terms—perhaps the advantages of world guidance and control in other endeavors will become more apparent.—*Des Moines Register*, July 7, 1946.

RADIO

The American Medical Association has inaugurated a new series of radio programs dramatizing the life and times of a doctor in one region of the United States and contrasting him with present times. These programs, carried by the National Broadcasting Company, are scheduled for Saturdays at 3 p. m. central standard time. Watch for announcements and listen in on these centennial broadcasts.

Public opinion of county medical societies and their activities are tremendously important to the over-all national picture. Legislatures generally obtain their best information and advice from their home communities and friends.

The relationship that the county medical society has with its community sets the pattern for national medical relationships.—*Bulletin of Polk County Medical Society*, January, 1947.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p.m.

WSUI—Thursdays at 2:45 p.m.

March 5-6	Worry and Fatigue	John C. Schrader, M.D.
March 12-13	How the Body Works	E. J. Watson, M.D.
March 19-20	A Health Inventory	E. E. Shaw, M.D.
March 26-27	Blue Cross	Mrs. Ann Lachner

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

ALLERGY IN THEORY AND PRACTICE—By Robert A. Cooke, M.D., Sc.D., F.A.C.P., Attending Physician and Director of the Department of Allergy, The Roosevelt Hospital, New York City. W. B. Saunders Company, Philadelphia, 1947. Price, \$8.

GYNECOLOGICAL AND OBSTETRICAL PATHOLOGY WITH CLINICAL AND ENDOCRINE RELATIONS—By Emil Novak, A.B., M.D., D.Sc. (Hon. Dublin), F.A.C.S., Associate in Gynecology, The Johns Hopkins Medical School; Gynecologist, Bon Secours and St. Agnes Hospitals, Baltimore; Fellow, American Gynecological Society, American Association of Obstetricians, Gynecologists and Abdominal Surgeons and Southern Surgical Association; Honorary Fellow, Societe Francaise de Gynecologie; The Royal Institute of Medicine, Budapest; Sociedad d'Obstetricia et Ginecologia de Buenos Aires; Central Association of Obstetricians and Gynecologists; Texas State Association of Obstetricians and Gynecologists; Past Chairman, Section on Gynecology and Obstetrics, American Medical Association. W. B. Saunders Company, Philadelphia, 1947. Price, \$7.50.

AN INTEGRATED PRACTICE OF MEDICINE—A Complete General Practice of Medicine from Differential Diagnosis by Presenting Symptoms to Specific Management of the Patient—by HAROLD THOMAS HYMAN, M.D., Volumes I, II, III, and IV, and Index. W. B. Saunders Company, Philadelphia, 1947. Price, \$50 per set.

PARENTERAL ALIMENTATION IN SURGERY With Special Reference to Proteins and Amino Acids—By ROBERT ELMAN, M.D., Associate Professor of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo. Paul B. Hoeber, Inc., New York, 1947. Price, \$4.50.

1946 YEAR BOOK OF GENERAL SURGERY—Edited by Everts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.

PHARMACOLOGY AND THERAPEUTICS—Originally written by ARTHUR R. CUSHNY, M.A., M.D., LL.D., F.R.S., Late Professor of Materia Medica and Pharmacology in the University of Edinburgh. Thirteenth Edition, thoroughly revised by ARTHUR GROLLMAN, A.B., Ph.D., M.D., F.A.C.P., Professor of Medicine and Chairman of the Department of Experimental Medicine, and Professor of Pharmacology and Chairman of the Department of Physiology and Pharmacology, The Southwestern Medical College; Attending Physician, The Parkland Hospital, and Consultant in Internal Medicine, The Baylor University Hospital, Dallas, Texas; and DONALD SLAUGHTER, B.S., M.D., Dean of the Medical School, University of South Dakota; formerly Professor of Pharmacology and Chairman of the Departments of Physiology and Pharmacology, the Southwestern Medical College, Dallas, Texas. Lea & Febiger, Philadelphia, 1947. Price, \$8.50.

THE PHYSIOLOGICAL BASIS OF MEDICAL PRACTICE, A University of Toronto Text in Applied Physiology—By CHARLES HERBERT BEST, O.B.E., M.A., M.D., D.Sc. (Lond.) F.R.S., F.R.C.P. (Canada), Professor and Head of Department of Physiology, Director of the Banting-Best Department of Medical Research, University of Toronto; and NORMAN BURKE TAYLOR, V.D., M.D., F.R.S. (Edin.), F.R.C.P. (Canada), M.R.C. S. (Eng.), L.R.C.P. (Lond.), Professor of Physiology, University of Toronto. Fourth Edition. The Williams & Wilkins Company, Baltimore, 1945. Price, \$10.

QUARTERLY REVIEW OF OBSTETRICS AND GYNECOLOGY, Vols. I, II, and III, 1943, 1944, 1945—Washington Institute of Medicine, Washington, D. C., Price, \$25 per set.

THE TREATMENT OF DIABETES MELLITUS—By Elliott P. Joslin, A.M., M.D., Sc.D., Medical Director, George F. Baker Clinic, New England Deaconess Hospital; Clinical Professor of Medicine Emeritus, Harvard Medical School; Consulting Physician, Boston City Hospital; HOWARD F. Root, M.D., Physician-in-Chief, New England Deaconess Hospital; Consultant in Medicine, Eastern Maine General Hospital, Massachusetts State Infirmary, Tewksbury, Middlesex County Sanatorium; Associate in Medicine, Harvard Medical School; PRISCILLA WHITE, M.D., Physician, New England Deaconess Hospital; Instructor in Pediatrics, Tufts College Medical School; ALEXANDER MARBLE, A.M., M.D., Physician, New England Deaconess Hospital; Instructor in Medicine, Harvard Medical School; Colonel, Medical Reserve Corps, U. S. Army; Chief, Section of General Medicine, Branch No. 1 (New England), Veterans Administration; C. CABELL BAILEY, M.D., Physician, New England Deaconess Hospital; Research Fellow in Medicine, Harvard Medical School. Eighth edition. Lea & Febiger, Philadelphia, 1946. Price, —.

1946 YEAR BOOK OF GENERAL MEDICINE—Edited by George F. Dick, M.D.; J. Burns Amberson, M.D.; George R. Minot, M.D., S.D., F.R.C.P.; William B. Castle, M.D., S.M., M.D., (Hon.) Utrecht; William D. Stroud, M.D.; George R. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1946. Price, \$3.75.

POSTGRADUATE OBSTETRICS—By William F. Mengert, M.D., Professor and Chairman, Department of Obstetrics and Gynecology, Southwestern Medical College; Chairman, Obstetrics and Gynecology, Parkland Hospital, Dallas, Texas. Paul B. Hoeber, Inc., New York, 1947. Price, \$5.

1946 YEAR BOOK OF GENERAL THERAPEUTICS, November, 1945-August, 1946—Edited by Oscar W. Betha, Ph.M., M.D., F.A.C.P., Professor of Clinical Medicine, Tulane University School of Medicine (retired); Senior in Medicine, Southern Baptist Hospital; Consulting Physician, Charity Hospital, Member of the Revision Committee of the U. S. Pharmacopeia 1930-1940; Author of "Clinical Medicine" and "Materia Medica, Drug Administration and Prescription Writing." The Year Book Publishers, Inc., Chicago, 1946. Price, \$3.75.

BOOK REVIEWS

AN INTEGRATED PRACTICE OF MEDICINE

By Harold Thomas Hyman, M.D. Four volumes and separate index. W. R. Saunders Co., Philadelphia, 1947. Price, \$50.

In recent years the problems of the general practitioner of medicine have been much like the weather, concerning which Mark Twain commented that much had been said but little had been done.

In this ambitious four-volume work, Dr. Hyman attempts to do a great deal about the general practitioner's problems. Obstetrics, minor surgery, internal medicine, pediatrics, dermatology, laboratory procedures, emergency major surgery—all the daily problems of a busy general practice are discussed, and an attempt is made to "integrate" the patient's complaints and findings, his diagnosis and treat-

ment. To this end there are more than three hundred tables of differential diagnosis based on presenting symptoms and signs. A very convenient and thorough system of cross references appears throughout the body of the text, sparing the reader the necessity of searching footnotes or chapter headings.

There are sections on the technics of medical diagnosis and therapy and on the "art of prognosis"; there are suggestions on when to call a "specialist" and on the problems and mechanics of establishing an office and a practice; there is a detailed discussion of caudal anesthesia; there is an index volume with separate indices of illustrations, of diagnostic tables, and of general subject matter. There are some 1,100 illustrations, more than one-fourth of them in color. They appear to have been gathered

impartially from original work, other textbooks, and the publications of various pharmaceutical and surgical supply houses, but they are for the most part pertinent and helpful.

In so ambitious a survey of so complicated a field as modern medical practice, it is not surprising that occasional inaccuracies appear. The reader learns with some surprise, for example, that among conditions in which there is no abnormal communication between the two sides of the heart are septal defects and patent ductus (p. 962), or that "there is a unanimity of practice (in the first stage of labor) as to the preliminary administration of an opiate . . . or . . . demerol" (p. 2678). In general, however, the objective of supplying "a single source for synthesis of the present material of every day practice" appears to be well attained. The busy practitioner, with little time for searching through special journals and monographs, will find these volumes a valuable source of reference. Reproduction of illustrations and typography are excellent. The bibliography leaves much to be desired.

H. J. S.

THE DIFFERENTIAL DIAGNOSIS OF JAUNDICE

By Leon Schiff, Ph.D., M.D., Associate Professor of Medicine, Department of Internal Medicine, University of Cincinnati Medical School; Director, Gastric Laboratory, Cincinnati General Hospital. The Year Book Publishers, Inc., Chicago, 1946. Price, \$5.50.

This excellent monograph on jaundice is concise, well organized, and covers the subject thoroughly. The excellent printing enhances its readability.

Improvements in surgical technic now allow resection with good results in certain neoplastic lesions associated with jaundice. The author stresses the importance of the differential diagnosis of jaundice in time to give resectable lesions the benefit of surgery.

The book is divided into discussions on general considerations, hepatogenous, neoplastic, calculous, retention and neonatal jaundice. Main points to seek in the history and physical examination are mentioned. The author emphasizes the importance of modern laboratory methods, interpretation of results, and presents several differential diagnostic tables. A section on radiologic findings with x-rays illustrating typical cases is well presented. A method of needle biopsy of the liver is shown with technic simply outlined. Excellent micro-photographs illustrate the pathologic characteristics of various causes of jaundice. The reviewer feels the dangers of such biopsies are not sufficiently stressed. In the appendix a complete step by step detailed procedure is outlined for the performance of the various laboratory tests mentioned in the book.

This monograph is easily read and should be helpful to those interested in the differential diagnosis of jaundice.

A. L. J.

ANESTHESIA IN GENERAL PRACTICE

By Stuart C. Cullen, M.D., Head of Division of Anesthesiology, Department of Surgery, State University of Iowa Hospitals; Associate Professor of Surgery (Anesthesiology), State University of Iowa College of Medicine. The Year Book Publishers, Inc., Chicago, 1946. Price, \$3.50.

This book is a comprehensive yet concise manual on anesthesia. Written so as to be easily understood, it should be read by any physician doing anesthesia, whether he performs it as a specialty or in conjunction with his practice.

The first chapter is devoted entirely to pre-anesthetic medication which, in my estimation, is the way any book on anesthesia should begin, for the pre-anesthetic medication given to any surgical patient is very important in the smoothness of the anesthesia rendered.

The chapter on curare is intensely valuable as it has come into so much importance of late for good relaxation in abdominal work. The remainder of the book is devoted to the different types and methods of anesthesia, and the sections devoted to signs of anesthesia, choice of anesthetic, agents, recognition and treatment of shock, and pre and post anesthetic care are all very important to anyone doing anesthesia.

This book is strongly recommended.

T. A. B.

PENICILLIN, ITS PRACTICAL APPLICATION

By Sir Alexander Fleming, F.R.C.S., F.R.C.P., F.R.S., Nobel Prize Award, Discoverer of Penicillin; Professor of Bacteriology, University of London, St. Mary's Hospital; and twenty-eight contributors in special fields of medicine. The Blakiston Company, Philadelphia. Price, \$7.

This book contains a preface and an introduction by the author describing the history and the development of penicillin. This is followed by twenty-six chapters or sections describing the use of penicillin in the medical specialties and in the different fields of therapeutics written by various men.

The penicillin sensitive and insensitive bacterial invaders are listed. Methods, directions for penicillin preparations, and dosages are given in detail. Much of the summarized experience with this antibiotic is from the work of British war services. In general, the dosages seem less than those used today. Also, not everyone will now agree with the chapter on penicillin therapy of syphilis. The illustrations are good, and each chapter has a summary of references in the literature pertinent to its contents. An unusual chapter deals with the use of penicillin in animal diseases. There is a good index. This book should be a valuable reference work and guide to the use of penicillin in all types of practice.

D. J. H.

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk County

The regular meeting of the Black Hawk County Medical Society was held at the Russell-Lamson Hotel on February 18 at 6 p. m. C. H. Watkins, M.D., of the Mayo Clinic, spoke on "The Diagnosis and Treatment of the Leukemias and Lymphoblastomas."

Chickasaw County

The Chickasaw County Medical Society held its annual meeting January 14. Officers elected were: E. C. O'Connor, M.D., president; Paul C. Richmond, M.D., secretary-treasurer; Paul E. Gardner, M.D., delegate; P. E. Stuart, M.D., alternate delegate.

Crawford County

The Crawford County Medical Society met February 13 at Hotel Denison, Denison, for dinner and a business meeting. C. Dudley Miller, M.D., of that town discussed "A Syndrome of Urethritis, Conjunctivitis and Arthritis—So-called Reiter's Disease." The county fee bill and a new hospital project were discussed. Wives of the members were guests at the dinner.

Fayette County

The Fayette County Medical Society held its meeting at Pine Lodge, Oelwein, on January 23. Following a 6:30 o'clock dinner, W. E. Walsh, M.D., of Hawkeye was elected president; A. F. Grandinetti, M.D., Oelwein, vice president; and H. L. Schrier, M.D., secretary-treasurer.

Iowa and Illinois Central District

The Iowa and Illinois Central District Medical Association will hold its quarterly meeting March 20 at the Fort Armstrong Hotel in Rock Island, Ill. Dinner will be served at 6:30 p. m. in the ballroom, followed by the scientific program at 8 p. m. Zachary J. Romeo of Rock Island will give a short talk on "The Use of Pituitary Extracts during Labor." Guest speaker of the evening will be Russell L. Haden, M.D., of the Cleveland Clinic, Cleveland, Ohio, who will speak on "Rheumatoid Arthritis." All physicians who are interested are invited to attend.

Jackson County

The Jackson County Medical Society held a meeting in Maquoketa at 7:30 p. m. January 22. Officers elected were: O. L. Frank, M.D., president; J. J. Tilton, M.D., vice president; F. J. Swift, Jr., M.D., secretary-treasurer.

Johnson County

The Johnson County Medical Society met at the Hotel Jefferson on February 5 for a 6 o'clock dinner. Following the business meeting, R. H. Flocks, M.D., Professor in the Department of Urology, University Hospitals, spoke on "Recent Advances in Surgical Treatment of Carcinoma of the Bladder." N. G. Alcock, M.D., Professor and Head of the Department of Urology at the University Hospitals, opened the discussion followed by E. D. Warner, M.D., Professor and Head of the Department of Pathology.

Mahaska County

Mahaska County Medical Society members and the Mahaska hospital board held a dinner meeting at the Helen Perkins dining room at the Lacey Hotel January 27. The purpose of the meeting was a discussion of laboratory work at Mahaska Hospital. R. E. Duncan, M.D., head of the Duncan laboratories in Kansas City, spoke regarding his work. G. H. Clark, M.D., presided over the meeting.

Marion County

New officers were elected at the annual dinner and meeting of the Marion County Medical Society January 14 at Parson's Cafe, Knoxville. They were: H. L. Bridgeman, M.D., Knoxville, president; F. M. Roberts, M.D., Knoxville, vice president; D. A. Mater, Knoxville, secretary-treasurer; E. C. McClure, M.D., Bussey, delegate; P. H. Van Zante, M.D., Pella, alternate; and F. P. Ralston, M.D., and H. E. White, M.D., both of Knoxville, censors.

Marshall County

The Marshall County Medical Society met at the Presbyterian Church in Marshalltown February 4. Ralph A. Dorner, M.D., of the Department of Surgery of the State University of Iowa College of Medicine, spoke on "Carcinoma of the Esophagus." He illustrated his talk with films.

O'Brien County

The O'Brien County Medical Society held a meeting at the court house in Primghar January 23 at 7:30 p. m. Doctors elected to serve for the coming year were: Kermit Myers, M.D., president; L. H. Mattice, M.D., vice president; W. S. Balkema, M.D., secretary.

Scott County

The Scott County Medical Society met February 4 at the Lend-a-Hand Club in Davenport. Following a 6 o'clock dinner, a special program was presented.

Tama County

The Tama County Medical Society met in Garwin January 28 as a farewell to Dr. and Mrs. E. C. Knight and in honor of Dr. and Mrs. A. Barbieri who have purchased Dr. Knight's practice. Wives of doctors attended the dinner which was served at the Evangelical United Brethren Church by the Ladies' Aid Society. Following the dinner, J. S. McQuiston, M.D., of Cedar Rapids, spoke on "Functional Diseases."

Sioux Valley Medical Association

The Sioux Valley Medical Association held its fifty-first annual meeting at the Martin Hotel, Sioux City, January 28 to 30. J. H. Kerr, M.D., of Akron was elected president; Walter Benthack, M.D., of Wayne, Neb., vice president; R. H. McBride, M.D., Sioux City, secretary; and Anton Hayden, M.D., Sioux Falls, S. D., treasurer. Several out-of-state physicians served as guest speakers for the group.

Taylor County

The January meeting of the Taylor County Medical Society was held in Lenox. William R. Hamsa, M.D., of Omaha spoke and showed slides on disability of the foot. Paul T. Cash, M.D., talked on convulsive disorders and their treatment.

Webster County

Officers elected at the Webster County Medical Society's annual meeting held at the Wahkonsa Hotel, Fort Dodge, were: Charles J. Baker, M.D., president; W. R. Fieseler, M.D., vice president; M. W. Burleson, M.D., secretary-treasurer; E. M. Kersten, M.D., delegate; A. A. Schultz, M.D., alternate; T. J. Dorsey, M.D., and John C. Shrader, M.D., censors; and A. A. Schultz, M.D., executive committee member.

Woodbury County

The February meeting of the Woodbury County Medical Society was held February 20 in the ballroom of the Mayfair Hotel, Sioux City. Following dinner, Hugh R. Butt, M.D., Associate Professor of Medicine of the Graduate School of Medicine, University of Minnesota, Mayo Foundation, spoke on "Infectious Hepatitis."

PERSONALS

Dr. E. S. Aeilts was guest speaker at the Legion Auxiliary meeting in Sibley February 10. His topic was "Your Heart," chosen in observation of National Heart Week.

Dr. Charles J. Baker addressed the Webster County and Fort Dodge Community Nursing Services at their joint annual meeting January 15 at the Wahkonsa Hotel, Fort Dodge. His subject was "The Role of the Public Health Nurse in the Field of Medicine."

Dr. James G. Baumann, formerly of Waterloo,

opened an office for the general practice of medicine in Riverside February 1. A graduate of the State University of Iowa College of Medicine with the class of 1943, he served a year in the armed forces before receiving his discharge in December, 1946.

Dr. E. T. Butterfield, formerly of Dallas Center, received his discharge from the armed forces recently and plans to locate in Albuquerque, N. Mex., where he will serve as an eye specialist in a clinic.

Dr. L. D. Colbert, formerly of St. Paul, is now practicing medicine in Royal. He was recently discharged from the armed forces.

Dr. Solomon Greenhill has entered into partnership with Dr. Maurice Noun of Des Moines with practice limited to dermatology and syphilology. Dr. Greenhill was discharged from the army, in which he had served five years, with the rank of lieutenant colonel in January, 1946. He practiced in Bayonne, N. J., before coming to Des Moines in December.

Dr. R. E. Griffin and Dr. K. W. Myers formed a partnership and began the practice of medicine together in Sheldon February 1. Dr. Griffin practiced medicine there with the late Dr. C. A. Samuelson, while Dr. Meyers has practiced in Sheldon for the past thirteen years (with the exception of three years in the armed forces).

Dr. C. C. Hill of Maynard spoke to the Fayette County Nurses' Association at their January meeting. He discussed medicine and its relation to service.

Dr. Roy A. Hulse opened offices for the practice of medicine in Burlington January 25. A specialist in obstetrics and gynecology, he had been associated with the Gilfillan Clinic in Bloomfield since his discharge from the army in June, 1946. Dr. Hulse is a graduate of the University of Louisville School of Medicine.

Dr. Arnold L. Jensen of Council Bluffs left for California in January where he plans to take post-graduate work and practice medicine. Dr. Jensen had practiced in Council Bluffs since 1930.

Dr. Clare C. Jones of Spencer was guest speaker at the regular dinner meeting of the Business and Professional Women's Club February 12. His subject was "Health Is Not a Private Affair."

Dr. J. I. Limburg, Jr., of Jefferson participated in a panel discussion on "Better Health for Rural Children" at a meeting of the rural young married people in Jefferson January 9.

Dr. H. Vernon Madsen, Waterloo, became medical director and executive of the LaSalle County tuber-

culosis sanatorium at Ottawa, Ill., February 24. He had practiced in Waterloo for the past two years.

Dr. Carl Magsdick, formerly of Charles City, is now practicing with Dr. Donald W. and Dr. John W. Bickley of Waterloo. Following his discharge from the Navy Medical Corps, in which he served four years, he took a postgraduate refresher course at the Illinois Central Hospital, Chicago.

Dr. Josef R. Martin has become associated with the medical firm of Drs. Anneberg and Martin in Carroll. A specialist in diseases and surgery of bones and joints, Dr. Martin received his medical degree from Creighton University. He served two years in the army.

Dr. Robert P. Mason is now practicing in the office of Dr. Robert L. Parker of Des Moines. He recently completed his residency at the Methodist Hospital, Des Moines.

Dr. H. C. Merillat of Des Moines spoke at a meeting of the Business and Professional Women's Club February 12 in Hotel Warden, Fort Dodge. His subject was "The Mental Hygiene Program in the Community."

Dr. Wilbur Miller, director of the Psychopathic Department, University Hospitals, spoke on "Sex Education" at a meeting of the Child Conservation Club in Iowa City February 11.

Dr. J. H. Stalford of Sac City presented a paper at a recent meeting of the Kiwanis Club of that city. It concerned the history and development of the cell.

Dr. E. F. Van Epps of Clinton has entered a three year residency in radiology at the University of Iowa.

Dr. Frank Wilke of Perry, who practiced medicine in Woodward before entering service in 1941, spoke to the Lions Club of Woodward January 27.

MARRIAGE ANNOUNCEMENT

Miss Mary Louise Wyman of Yampa, Colo., became the bride of Dr. Alfred N. Smith of Des Moines in a candlelight service at 10 a. m. January 11 at St. Ambrose Cathedral. Both Dr. and Mrs. Smith recently were released from the navy. The couple will reside in Des Moines where Dr. Smith is serving a residency at Veterans Hospital.

DEATH NOTICES

Hazard, Charles Merrill, aged 77, of Arlington, died at his home January 30 as the result of a stroke suffered a few days earlier. A graduate of the State University of Iowa College of Homeopathic Medicine, Iowa City, in 1910, he was a mem-

ber of the Fayette County and Iowa State Medical Societies.

Koob, William Roscoe, aged 77, of Brayton, died in a Long Beach, Calif., hospital January 16. He was a graduate of Ensworth Medical College, St. Joseph, Mo., with the class of 1892. Dr. Koob was a life member of the Audubon County and Iowa State Medical Societies.

Ravitts, Joseph Lacher, aged 63, died at his home in Montezuma February 5 following a heart attack. Dr. Ravitts was a graduate of the Chicago College of Medicine and Surgery with the class of 1914 and a member of the Poweshiek County and Iowa State Medical Societies.

Ritter, John Franklin, aged 77, of Maquoketa, died January 29 at his home following a short illness. Dr. Ritter was graduated from the University of Michigan Medical School, Ann Arbor, in 1895. At the time of his death he was a member of the Jackson County and Iowa State Medical Societies.

SISTER ELIZABETH KENNY FOUNDATION *

The Iowa State Chapter of the Sister Elizabeth Kenny Foundation announces that expense-paid visits to the Elizabeth Kenny Institute at Minneapolis will be available to a number of Iowa physicians this spring and summer.

Short courses and demonstrations of the Sister Kenny technic for treating infantile paralysis will be offered at the Institute for visiting physicians from time to time. In addition, doctors are welcome to visit the Institute for informal observation.

The Iowa chapter of the Kenny Foundation, which recently completed its first fund campaign, will pay all expenses for a limited number of medical men to visit or study at the Kenny Institute.

Although details of organized courses have not been completed, Iowa doctors who wish to observe the work at the Institute are urged to indicate their interest as soon as possible according to Dr. James E. Dyson, Des Moines, medical adviser for the state.

Each physician is asked to indicate when it would be most convenient for him to visit Minneapolis, how long he would like to stay, and whether he wishes to go as an individual or to participate in an organized program.

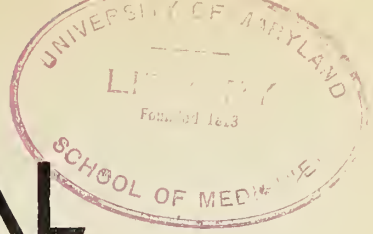
Inquiries may be addressed to Dr. Dyson or to Wesley Day, Iowa Field Director, Sister Elizabeth Kenny Foundation, 830 Liberty Building, Des Moines.

In addition, the Iowa chapter is offering scholarships to registered nurses for a two-year course of training in dermo-neuromuscular therapy at the Kenny Institute. Graduates of this course are certified as Kenny technicians, qualified to care for polio patients and train other nurses in this method.

*This announcement is published by request and does not reflect in any way the views and support of the Iowa State Medical Society.



OLD CAPITOL



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Members of the Iowa State Medical Society:

It is a great pleasure to extend greetings to the members of the medical profession of the State of Iowa through the Journal of the Iowa State Medical Society. The University is appreciative of the fact that each year one issue of the Journal is made available for a report by the College of Medicine and the University Hospitals of activities of interest to the profession.

The University, having been established by an Act of the General Assembly adopted Feb. 25, 1847, is at the end of its first century. At such a time, it is appropriate to point out that the life span of the University has witnessed unprecedented advances in the teaching and practice of medicine. With confidence we can assume that we are on the threshold of even greater advances. Never in our country's history has there been greater interest in questions of health and disease, and this interest has been reflected in the establishment and development of great colleges of medicine and hospitals, of which those in the University are a part, and in the desires of practitioners to keep abreast of the latest developments in medical sciences and services.

Let us assure you that the College of Medicine and the University Hospitals desire to work hand in hand with you in your efforts to advance the medical sciences and the quality of patient care.



Sincerely yours,

Virgil M. Hancher

President

State University of Iowa

THE ACTION OF CHOLINE ON THE BLOOD LIPID FRACTIONS IN CIRRHOSIS OF THE LIVER, DIABETES MELLITUS AND RELATED CONDITIONS OF DISTURBED FAT METABOLISM*†

William D. Paul, M.D., Kate Daum, Ph.D.,
and C. R. Kemp, M.S.

Choline was first isolated from the bile of pigs in 1849.¹ It was not until 1869, however, that choline was established as a component of lecithin.² The role of choline and choline derivatives as dietary factors was not recognized until after 1924, when it was discovered that depancreatized dogs maintained on proper insulin dosage died as a result of fatty infiltration of the liver.³ The addition of raw pancreas tissue to the diet of such diabetic dogs proved effective in preventing the deposition of fat in the liver, and it was soon determined that the activity of the raw pancreas was due to the lecithin which it contained.^{4,5} The next major advance came in the discovery that the ability of lecithin to prevent the deposition of fat⁶ in the liver was due to the choline present as a part of the lecithin molecule.

Chemically, choline is trimethyl beta hydroxyethyl ammonium hydroxide. It is a colorless, viscid, strongly alkaline liquid which is extremely hygroscopic. Because of its alkaline properties, choline forms a series of salts; the first salt of choline to be used experimentally and clinically was the chloride. Choline chloride, however, has an unpleasant taste and decomposes readily to liberate trimethylamine, the presence of which may impart an extremely unpleasant taste and odor to choline chloride preparations. Another widely used salt of choline is choline dihydrogen citrate, which is less hygroscopic and chemically more stable than the chloride. Its sour citrate taste can be pleasantly blended in a syrup which offers a stable, palatable form of choline for oral therapy.

Since both fats and fatty acids are insoluble in an aqueous medium, their transportation in the blood stream requires alteration into a more transportable form. The problem of fat transport in the body has taken on new significance in the light of recent discoveries which indicate that fat storage is not a simple process of deposition and maintenance of inert masses of lipids in body depots. It was believed, until recently, that ingested fat was oxidized directly as needed and that any excess was stored in an inactive form until metabolic needs caused it to be broken down.

Studies based upon the feeding of "tagged" fatty acids of high molecular weight have shown that even small amounts of such ingested fatty acids must first be incorporated into body depot fat before being utilized for oxidation.⁷ The body depot fat is not, therefore, an inert, inactive reserve; rather, it is a phase of a dynamic equilibrium. Ingested fats are constantly being deposited in the depots while others, previously deposited, are being withdrawn for oxidation. The problem of maintaining the fats in a transportable form to and from body depots becomes increasingly significant in terms of the newer concepts of fat storage.

Experiments have shown that the fats of the blood stream are transported to a great degree in the form of phospholipids or are rendered transportable by incorporation of phospholipid into the interfacial film of the fat particle. These phospholipids are believed to be formed both in the intestinal mucosa and in the liver. The role of the liver in fat metabolism is far from clear, but it is commonly accepted that the fat sent to the liver for temporary storage is converted to phospholipid chiefly by introduction of phosphoric acid and choline into the fat molecule. If this conversion of fat to phospholipid is blocked, fat tends to accumulate in the liver, giving rise to serious pathologic changes which ultimately result in irreversible degenerative processes in functional liver tissue.⁸ The end point of such pathology is necrosis and cirrhosis of the liver.

Since choline is a constituent of the lecithins and the sphingomyelins, two of the three classes of phospholipids, a deficiency of choline or of its chemical precursors may prevent the conversion of fats and fatty acids to phospholipids and thus give rise to deposition of excessive quantities of fat in the liver. While much remains to be learned about fat metabolism, present evidence points to the existence of an important relationship between the maintenance of adequate supplies of choline and other lipotropic agents and the conversion of fat to phospholipid.⁹ The phospholipids, in turn, are recognized as playing an essential but incompletely understood role in the absorption of fats from the intestinal tract and in the maintenance of the absorbed fat in a form transportable within the blood stream.

Those substances which serve to prevent the deposition of fat in the liver or are instrumental in removing such deposits, if already formed, are termed lipotropic agents. The current concept of the mechanism of lipotropic action is that such agents aid in converting neutral fats to phospholipids, in which form they are more readily transported within the blood stream. Choline, in the

*From the Departments of Internal Medicine and Nutrition, State University of Iowa College of Medicine.

†Aided by grant from the Flint, Eaton and Co., Decatur, Ill.

form of certain of its derivatives, is recognized as the most effective single lipotropic agent.

Neutral fatty livers, those in which the fat consists chiefly of simple glycerides of the fatty acids, respond readily to choline therapy. The neutral fat is converted to phospholipid and the liver is cleared of deposits of excess fat. Neutral fat deposition in the liver is prevented if sufficient choline is included in the diet.¹⁰ Cholesterol fatty livers were reported in early studies to be resistant to choline, but later research showed that a higher choline level and a longer period of choline therapy produced a significant response in cholesterol livers.¹¹ The biotin fatty liver was reported at one time to be totally resistant to choline therapy, but recent work has indicated that choline, rather than being ineffective, is the most effective lipotropic agent in terms of mobilizing the fat in the biotin fatty liver. The existence of the biotin fatty liver as a separate entity is in doubt.¹² Although choline has not been proved effective in preventing the deposition of fat in the liver in cases of poisoning by chloroform, carbon tetrachloride, phosphorus and related substances, it has been shown to aid in the removal of such fatty deposits upon withdrawal of the toxic agent. The period of recovery is shortened by choline therapy.^{13, 14}

Since the first recognition of choline as a lipotropic agent, research has broadened our knowledge of this and other lipotropic agents to a remarkable degree. The list of substances now known to be related to choline in function include: (1) proteins, especially those rich in methionine; (2) methionine and certain other amino acids; (3) liver and liver extracts; (4) the vitamin B complex; (5) betaine; (6) inositol, and (7) lipocaic. A review of the literature reveals a close relationship between such substances and their ability to influence fat metabolism and other biologic functions.

The lipotropic effects of protein therapy are due chiefly to the methionine content of the protein ingested. Certain other amino acids, cystine in particular, are believed to play some part in determining the effectiveness of protein in mobilizing liver fat, but their exact role is as yet unestablished. Proteins are also effective in repairing liver tissue damage which has resulted from fat deposits or from ingestion of toxic substances. A high protein diet is utilized, therefore, in the treatment of liver dysfunction associated with disturbed fat metabolism or with known cases of ingestion of substances injurious to liver tissue.

Methionine has lipotropic properties similar to but quantitatively less than those of choline.¹⁵ A

specific, direct effect of methionine has been postulated but has not been established. In terms of present evidence it appears that the protective effect of methionine results from its role in supplying methyl groups for the in-vivo synthesis of choline.¹⁶ Methionine also plays an important role in the general process of transmethylation, unrelated to choline synthesis. The complete significance of such methylating properties is not understood. Since modern concepts of therapy of cirrhosis call for diets rich in protein, the use of methionine per se is probably not essential. Sufficient methionine can be obtained in skimmed milk, cottage cheese and other dietary proteins. The high protein diet, in addition to supplying methionine is effective in repair of damaged liver tissue.

The knowledge gained in animal experimentation has now been extended to include regulation of certain disorders of fat metabolism in man. Results of clinical trials of choline and of other lipotropic agents are in accord with those obtained in earlier animal studies. An entirely new approach has been found to problems directly or indirectly the result of disordered fat metabolism; moreover, many pathologic states, until recently of unknown origin, are being related to degenerative changes induced in the liver or other areas of the body as a result of such disturbances of fat distribution.¹⁷

Malnutrition as a causative factor in cirrhosis is now well recognized. The weight of scientific evidence opposes the concept of direct causation of cirrhosis by alcohol.¹⁸ The newer concept is that the alcoholic, due to his failure to eat, suffers degenerative liver changes initiated by deposition of fat in the liver. This condition results in further loss of appetite and the cycle continues. Finally, the functional capacity of the liver is impaired to an extent wherein obvious liver enlargement occurs and liver function tests reveal a loss of functional capacity. The final stage appears in the form of increased hepatic pressure, lowered plasma proteins, and ascites.⁸

The recognition of the relationship between fatty infiltration of the liver and subsequent degenerative changes has opened a new epoch in treatment of cirrhosis and related forms of liver pathology. Responses obtained through a correction of dietary inadequacies have led to the conclusion that nutritional factors are responsible for the majority of cases of cirrhosis of the liver.^{19, 20, 21, 22, 23} A deposition of fat in the liver is known to precede or accompany degenerative liver tissue changes. Under ordinary conditions a well balanced diet should contain a supply of lipotropic agents sufficient to convert normal fat intake into phospholipid. Fac-

tors such as protracted illness, alcoholism, abnormal levels of fat ingestion, deficiency of dietary protein, a lowered food intake arising from economic conditions, an inefficient utilization of food or exposure to certain toxic substances may, however, give rise to fatty deposition in the liver. The fat deposited in the liver may initiate changes which ultimately result in irreversible degeneration of liver tissue, the end point of which is cirrhosis.

Treatment of cirrhosis of the liver in any of its stages of development is based upon evidence which indicates that malnutrition is a primary factor in its etiology. Diets high in fat and low in protein, carbohydrates and vitamins, especially the B complex, are known to initiate development of fatty livers. The deposition of fat in the liver is known to be followed by pathologic tissue changes which impair liver function and eventually result in irreversible cirrhosis. Modern concepts of therapy of cirrhosis call for a reversal of this series of events through institution of a well-defined dietary regime. Accordingly, the following measures are indicated: (1) the elimination of any etiologic agent, direct or indirect, such as alcohol or industrial poisons; (2) reduction of dietary fat to a minimum; (3) the use of a diet high in carbohydrate; (4) the ingestion of protein to limits of tolerance, especially skimmed milk, cottage cheese and other proteins rich in methionine; (5) the ingestion of high levels of the vitamins, both water soluble and fat soluble (the B complex is especially helpful in mobilizing liver fat); (6) the administration of choline, which is the most effective of the lipotropic agents.

Close supervision of the food ingested by the patient is essential. Anorexia will interfere with food intake and the patient must be impressed with the importance of eating the prescribed diet. As choline mobilizes the liver fat, the appetite improves and the patient eats more readily. The restoration of proper eating habits is an important feature of therapy of cirrhosis.

The successful application of choline in treatment of cirrhosis of the liver has stimulated renewed interest in the role of the liver in other pathologic disorders. Increasing emphasis is being placed upon the liver in regulation of carbohydrate stores in the body.²⁴ Adequate response to normal endogenous insulin supplies is dependent upon maintenance of proper liver function. A damaged liver requires either excessive insulin production by the pancreas or supplementary exogenous insulin to properly regulate the carbohydrate reserves. The concept of insulin resistance, until recently confined to lack of response to exogenous insulin, is now extended to consideration

of liver damage as a factor in all cases of diabetes.²⁵

The high incidence of enlarged livers noted in diabetes mellitus indicates a close relationship between liver dysfunction and failure of the carbohydrate regulating mechanism. Recent studies show that liver function is impaired in a high percentage of diabetics.²⁶ The frequency of hepatic involvement is higher in uncontrolled cases and reaches its highest incidence in cases with diabetic acidosis and coma. It has been known for many years that diabetic patients are highly susceptible to fatty infiltration of the liver. That impaired liver function may be a contributing factor in the development of the diabetic syndrome is indicated by the fact that hyperglycemia, glycosuria, and a decreased glucose tolerance are seen in obese patients, apparently as the result of fatty infiltration of the liver alone. Liver impairment, as a result of pathologic changes initiated by fatty infiltration, decreases the response to insulin and further complicates the diabetic picture. Improvement in liver function by dietary treatment improves the response to insulin and diminishes the need for exogenous insulin supplements. The vitamin B complex has proved useful in maintenance and restoration of liver function in diabetes.²⁵ Choline, through its lipotropic action, aids in preventing fatty infiltration of the liver and has proved beneficial in controlling the liver damage associated with the diabetic state.

The experimental work presented in this paper indicates that choline exerts a general regulatory effect on blood lipids, conditions of hyperlipemia and hypolipemia, both tending to return toward normal levels. The stabilizing effect of choline on blood lipids has stimulated the clinician to use this and other lipotropic agents in a variety of conditions.²⁷ Dimitry and Beard have recently stated "that choline is a remarkable body constituent in the life process."²⁸ Favorable clinical results have been reported in psoriasis, burns, hepatorenal syndrome, and other disorders of fat metabolism.^{28, 29, 30} Disturbed blood lipid levels are also common in pregnancy, pernicious anemia, idiopathic hypochromic anemia, acute and chronic hemorrhagic anemia, hypo and hyperthyroidism and in extrahepatic, hepatocellular and hemolytic jaundice. Although choline is not known to exert any specific action in such disorders, its lipotropic properties may be beneficial in the maintenance of the integrity of the liver. The clinical response to choline therapy in such cases is encouraging and serves to re-emphasize the importance of the liver in the many metabolic processes recognized as dependent in some manner upon liver function.

Studies on the efficacy of choline therapy have been in progress at the University Hospital for a long period. In order to evaluate experimentally the action of this lipotropic agent on fat metabolism it was decided to determine the total blood fats and the lipid fractions in blood serum before and during choline therapy. These studies were carried out on normal individuals and on patients with diabetes mellitus, cirrhosis of the liver and other conditions involving abnormal fat metabolism. The blood lipids were determined by the fractional method of Gibson and Lowe.³¹ The results obtained by this method were checked by other techniques such as Bloor's³² method for cholesterol and cholesterol esters and Koch's³³ technique for total fats. The results obtained by both methods of analyses checked closely. The normal lipid values usually given in the literature are: total fats, 500-700 mg. per cent; phospholipids, 195-255 mg. per cent; cholesterol, 150-200 mg. per cent; and cholesterol esters, 60 to 70 per cent of the total cholesterol values.

Choline hydrochloride in a 50 per cent water solution was used in the first series of studies. Amounts up to 6 gms. daily were given, but there was no evidence of the necessity for such high levels; therefore three grams was accepted as the standard dose. When choline dihydrogen citrate became available, a 25 per cent W/V solution in a 25 per cent or 50 per cent syrup was substituted because this salt is more palatable. The syrup was given three times a day in a small portion of water at mealtime.

TABLE I
Fluctuations in blood fat without choline.

Subjects Normals	Total Fats Mgm%	Phospho- lipids Mgm%	Cholesterol Mgm%	Cholesterol Ester % total Chol.
J. B.				
Initial.....	484	204	145	89
After 5 days..	536	224	147	82
After 10 days..	496	148	160	87
After 15 days..	496	164	178	70
M. Br.				
Initial.....	572	190	140	64
After 5 days..	456	144	115	65
After 10 days..	474	108	97	74
After 15 days..	498	170	125	64
C. D.				
Initial.....	450	144	136	68
After 5 days..	408	146	120	70
After 10 days..	394	166	152	69
After 15 days..	440	168	100	75
M. Mc.				
Initial.....	624	150	110	70
After 5 days..	542	146	135	77
After 10 days..	584	174	117	70
After 15 days..	642	190	140	71
D. Mc.				
Initial.....	566	164	145	79
After 5 days..	540	151	125	80
After 10 days..	504	141	120	86
After 15 days..	566	208	100	70
F. S.				
Initial.....	478	132	150	86
After 5 days..	514	118	154	85
After 10 days..	568	220	170	83

TABLE II
Total blood fats during choline administration.

Subjects Normals	Initial Mgm%	After 5 Days Mgm%	After 10 Days Mgm%	After 15 Days Mgm%	After 20 Or More Days Mgm%
M. M.	668	552	562	548	580
E. F.	480	544	526	564	568
L. S.	620	608	572	552	544
R. F.	502	540	616	534	...
G. F.	444	492	553	530	...
E. B.	532	530	616	599	...
E. M.	492	498	500	500	...
M. A.	496	634	508	508	...
I. F.	444	382	482	424	...
B. S.	482	566	548	...	524
R. W.	476	572	442	544	...
B. G.	568	416	378	504	...
B. P.	608	576	540	520	...

With the exception of the diabetic patients all the subjects received a diet moderately low in fat and higher than normal in protein, the extra protein being given in the form of skimmed milk. The diabetics received the routine diabetic diets containing 1 gram of protein per kilogram of body weight.

Total fats and blood lipid fractions were determined over a period of days in a number of normal subjects. Representative cases are shown in table I. These results reveal that there is a fairly wide variation from one individual to another but that a given individual maintains a rather constant pattern of blood lipid fractions. When choline was administered to normal individuals, there was a marked tendency for total fats to stabilize at levels nearer to the average normal (table II). The blood cholesterol (table III) after choline administration also had a tendency to stabilize at average normal levels. The phospholipids (table IV) showed the least change of all but still showed a tendency to stabilize at higher values.

A large number of patients with cirrhosis of the liver were given choline as part of the program of therapy. The blood fat changes occurring in a representative group of cirrhosis patients during a period limited to fifteen days is given in table V. These results show that in this limited period of time there was no uniform trend in the changes. However there seemed to be a tendency for one

TABLE III
Blood cholesterol during choline administration.

Normal Subjects	Initial Value Mg%	Fifth Day	Tenth Day	Fifteenth Day	Twentieth Day
E. B.	140	140	150	155	...
E. F.	115	135	135	130	135
G. F.	140	145	140	150	...
R. F.	135	135	140	150	...
E. M.	125	120	120	125	...
M. M.	135	135	160	150	150
R. P.	130	130	135	140	130
L. S.	135	140	145	150	...
R. W.	140	125	125	132	...
B. S.	192	180	178	182	...
I. F.	105	120	160	132	...
B. G.	150	75	122	100	...
G. S.	100	158	127	120	...
M. A.	120	172	172	168	...

or more of the values to approach more normal levels. For example, patient W. N. showed a marked rise in cholesterol and phospholipid but little change in total fat. In contrast, patient A.K. showed a marked change in total fat but no significant change in phospholipid or cholesterol. In general the addition of choline to the therapy employed tended to produce an over-all improvement in the blood fat picture which initially showed consistently low values. It must be emphasized that patients with cirrhosis of the liver respond very slowly to any form of therapy.

A series of patients with diabetes mellitus was divided into two groups. One group was given choline in addition to the usual diabetic management, the other group receiving no choline. Table VI shows that in the group receiving choline, the blood lipid values tended to approach normal, but the non-choline group showed no such trends. The number of patients shown in table VI is small, but as a check upon these results another series of forty diabetic patients was studied similarly, twenty being given choline and twenty serving as controls. In this large series the same effect of choline was noted, namely, a stabilization of blood lipids at values nearer normal. In the control group twelve had total fat values in the normal range and eight were abnormal. In the choline treated group seventeen of the patients had normal total fat values and only three were abnormal.

Another series of patients with a variety of disorders including multiple sclerosis, infectious hepatitis, chronic nephritis, xanthomatosis, porphyrinuria, extensive burns and lipoid nephrosis were observed before and during choline therapy. In the patients with multiple sclerosis the initial blood fat pictures and the effects of choline therapy were essentially like those observed in the normal group. The total blood fats in cases with infectious hepatitis varied from 526 to 1120 mg. per cent. When the total fat was about normal choline caused little or no change, but a marked change was noted when the total blood fat was very high. In one instance an initial total blood

TABLE IV
Phospholipids during choline administration.

Subjects	Initial Mgm%	After 5 Days Mgm%	After 10 Days Mgm%	After 15 Days Mgm%	After 20 Or More Days Mgm%
Normals					
M. M.	186	185	196	212	200
E. F.	170	204	195	196	204
L. S.	196	216	235	200	200
R. F.	148	176	204	198	...
G. F.	192	210	220	198	...
E. B.	170	198	210	198	...
E. M.	150	188	190	190	...
M. A.	126	...	148	...	...
I. F.	102	68	48	72	...
B. S.	132	100	100	142	...
R. W.	188	174	118	172	...
B. G.	136	98	40	116	...

TABLE V
Blood lipids during choline administration.
Patients with portal cirrhosis.

Subjects	Blood Fats Mgm%	Phospho- lipids Mgm%	Cholesterol Mgm%	Cholesterol Ester % of Total Chol.
J. A.				
Initial.	294	107	65	64
After 5 days..	276	98	50	48
After 10 days..	245	72	75	42
After 15 days..	280	76	78	35
A. D.				
Initial.	380	48	120	82
After 5 days..	424	32	110	88
After 10 days..	440	48	103	85
After 15 days..	412	32	115	74
J. K.				
Initial.	420	128	125	80
After 5 days..	452	140	138	88
After 10 days..	384	119	155	80
After 15 days..	440	132	115	79
W. N.				
Initial.	304	28	85	90
After 5 days..	360	80	87	90
After 10 days..	360	200	170	79
P. F.				
Initial.	684	200	210	70
After 5 days..	672	216	227	66
After 10 days..	612	190	195	70
T. M.				
Initial.	412	148	140	40
After 5 days..	456	216	120	37
After 10 days..	456	216	120	41
H. K.				
Initial.	372	...	61	48
After 5 days..	308	120	59	38
After 10 days..	504	220	75	60
C. S.				
Initial.	496	392	120	28
After 5 days..	556	200	175	32
O. H.				
Initial.	636	256	200	22
After 5 days..	512	360	190	27
After 10 days..	460	200	170	50
M. H.				
Initial.	388	114	119	54
After 5 days..	454	168	129	59
After 10 days..	462	142	116	75
After 15 days..	400	118	126	50
L. P.				
Initial.	440	160	130	62
After 5 days..	428	44	158	59
After 10 days..	638	268	176	58
After 15 days..	424	164	110	54
A. K.				
Initial.	346	106	130	..
After 5 days..	450	112	70	..
After 10 days..	508	116	115	..
After 15 days..	550	118	110	..
J. R.				
Initial.	598	122	204	32
After 5 days..	568	120	212	67
After 10 days..	533	154	170	83
After 15 days..	503	120	161	81
F. U.				
Initial.	576	76	127	..
After 5 days..	418	74	125	..
After 10 days..	400	64	130	..
After 15 days..	420	92	132	..
H. J.				
Initial.	360	...	128	..
After 5 days..	424	135	105	..
After 10 days..	428	130	155	..
After 15 days..	580	180	140	..
H. S.				
Initial.	404	140	160	..
After 5 days..	404	132	105	..
After 10 days..	440	132	150	..
After 15 days..	500	...	...	..
P. B.				
Initial.	364	Too low to determine	70	..
After 5 days..	368	...	105	..
After 10 days..	372	...	120	..
After 15 days..	424	...	165	..

fat level of 1120 mg. per cent was reduced to 716 mg. per cent at the end of thirty days, and at the same time the phospholipids dropped from 456 mg. per cent to 184 mg. per cent.

One case of xanthomatosis was observed in which the total blood fat was 2208 mg. per cent; the phospholipids, 1364 mg. per cent; the cholesterol, 660 mg. per cent. After fifteen days of choline therapy, the total blood fats had dropped to 1762 mg. per cent; the phospholipids to 756 mg. per cent; and the cholesterol to 425 mg. per cent. Two other cases, one with porphyrinuria and one with chronic nephritis, also showed initial high total blood lipids. In these two cases the total lipids were decreased but the effects were not as striking as in the case with xanthomatosis. In a patient who was severely burned the initial total

lipids were low. After twenty-five days of choline therapy the total lipids rose somewhat above normal. A case of lipoid nephrosis having high initial lipid levels showed no significant change after fifteen days of choline therapy.

Summary and Conclusions

During the past few years evidence has accumulated to support the concept that cirrhosis of the liver in humans is largely of dietary origin. The role of choline and of other lipotropic agents in the etiology and therapy of cirrhosis is well established, and renewed hope has been given in the prognosis of this disease and of related forms of liver pathology. Though the diagnostic technics and evaluation of therapeutic results of choline therapy must be largely empirical due to lack of suitable liver function tests, the improvement in the general well being of the patient cannot be ignored. The clinical response, however inadequate from a purely scientific viewpoint, is the ultimate measure of value and cannot be denied on the basis of lack of objective data from the laboratory.

Choline has been established as a constituent of the phospholipid molecule and is known to play some part in the conversion of neutral fat to phospholipid. The phospholipids, in turn, are believed to play an important role in the maintenance of normal fat deposition and transportation; although choline is known to play an important part in regulation of deposition of fat in the liver, little data is available to directly relate choline with the levels of blood lipid fractions observed in health and disease. In view of these relationships, studies were made to determine the effect of choline therapy upon the blood serum lipid distribution, both in health and in various pathologic conditions. It was hoped that some knowledge might be gained which would further advance our understanding of the relationship between lipotropic agents and abnormal fat metabolism.

The results of this investigation indicate that choline exerts a measurable degree of influence upon the total blood lipid and the distribution of blood lipid fractions. These data reveal a tendency toward a stabilization of blood lipids at levels more nearly within normal ranges when choline is administered as part of the therapeutic program. Studies were made upon cases of diabetes mellitus, cirrhosis of the liver, multiple sclerosis and a miscellaneous group of pathologic conditions in which abnormal fat metabolism is a recognized factor. The objective data obtained supports the concept that choline plays some part in the regulation of fat transportation and deposition. The diabetics

TABLE VI
Blood lipids in patients with diabetes mellitus receiving choline.

Subject	Total Fats Mg%	Phospho- lipids	Choles- terol
D. A.			
Initial.....	812	180	210
After 5 days.....	840	190	153
After 10 days.....	750	195	149
After 15 days.....	600	190	149
O. A.			
Initial.....	620	140	150
After 5 days.....	600	136	147
After 10 days.....	640	200	198
After 15 days.....	600	220	150
L. B.			
Initial.....	620	200	128
After 5 days.....	692	184	138
After 10 days.....	632	164	153
After 15 days.....	660	204	143
C. D.			
Initial.....	780	216	215
After 5 days.....	600	220	217
After 10 days.....	652	200	150
After 15 days.....	640	206	153
A. C.			
Initial.....	520	130	98
After 5 days.....	428	126	108
After 10 days.....	620	148	150
After 15 days.....	542	132	158
Diabetic patients receiving no choline.			
A. B.			
Initial.....	700	190	170
After 5 days.....	764	200	150
After 10 days.....	750	210	130
After 15 days.....	720	180	130
M. C.			
Initial.....	536	165	120
After 5 days.....	604	150	112
After 10 days.....	609	172	115
After 15 days.....	...	...	...
H. F.			
Initial.....	696	196	165
After 5 days.....	680	185	155
After 10 days.....	682	200	169
After 15 days.....	700	185	200
K. K.			
Initial.....	876	288	210
After 5 days.....	796	280	185
After 10 days.....	800	278	200
After 15 days.....	812	250	200
R. R.			
Initial.....	592	140	120
After 5 days.....	500	135	145
After 10 days.....	530	128	136
After 15 days.....	540	130	120

studied did not show the high cholesterol values usually associated with this disease, but the diabetics receiving choline showed more nearly normal lipid levels than a control group. Low lipid levels were found in cirrhosis cases and choline produced a definite increase in the blood lipid levels in a significant number of these. In general, choline therapy tended to result in an improved blood lipid picture wherein initial abnormalities existed previous to initiation of therapy.

Though the objective results in terms of blood lipid distribution are not to be interpreted as conclusive evidence of the benefits of choline therapy, this study shows a correlation between the laboratory findings and the marked subjective responses made to the administration of choline. All subjects studied, including the normals, noted an increased sense of well being, an improved appetite and an increase in vigor. Withdrawal of choline could be detected by the patient in about three weeks. Both the objective and subjective results of choline therapy in this study support the concept of the importance of this drug and of lipotropic agents in general in treatment of pathology related to abnormal fat metabolism.

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PUNCH BIOPSY OF THE LIVER

T. Lyle Carr, M.D.

Routine liver function tests are relatively non-specific and, until recently, needle biopsy of the liver was of little value in establishing a diagnosis. However, in 1941 Tripoli and Fader¹ described a punch biopsy method in which adequate tissue specimens were obtained in a selected group of patients with large livers. They employed a needle which had been introduced a few years earlier as a tumor biopsy needle by Silverman.²

In 1945 Hoffbauer³ and his associates reported twenty cases of liver disease in which punch biopsy was performed. Schmidt and Wells⁴ added an additional 25 cases in the same year. All these workers used the Vim-Silverman needle, but Hoffbauer also employed a modification of the original Silverman design which could be used during peritoneoscopy.

Davis, Scott and Lund⁵ in 1946 reviewed 88 needle biopsies of the liver performed on 79 patients. Of these, 9 were post-mortem, four were ante mortem with peritoneoscopy control, and 67 were ante mortem without peritoneoscopy control. Twenty-six were done before 1943 using other technics with only moderate success. Using the

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Silverman needle in 1943 and, more recently, the Roth-Turkel⁶ needle, their results have been consistently good.

Among the complications which have been reported, or are theoretically possible, are perforation of the gallbladder or other abdominal viscera; excessive bleeding into the peritoneal cavity or abdominal wall; introduction of infection or spread of localized infection in the general peritoneal cavity; and injury to the adrenal gland, kidney or pancreas.

Since 1944, we have performed punch biopsies on 24 patients with liver disease on the Medical Service at the State University of Iowa Hospitals. The Vim-Silverman needle was employed in all cases (fig. 1). This procedure was performed by various members of the staff, and the material was examined by members of the Department of Pathology. Like Schmidt and Wells, each operator perfected the technic on several cadavers before he attempted it on living patients. However, in variance with this technic we did not use the intercostal approach. Punch biopsy was attempted

to hold his breath before any needle was introduced into the liver substance to minimize damage to the surface and prevent excessive bleeding. The small gauge needle was then withdrawn and, if no contraindication had been encountered, the skin was incised for a distance of four or five millimeters in the anesthetized area.

The outer fourteen-gauge portion of the biopsy needle was inserted through the incision and directed cephalad and to the right. It was carried along the previously anesthetized tract until the liver substance was entered. Then the inner split seventeen-gauge needle was inserted into the outer one and advanced its whole length so that the points entered the organ while the outer needle remained stationary. The outer needle then was advanced one-half inch while the inner needle was not moved, to compress the two halves of the inner needle and get a firm grip on the specimen with its prongs. The outer needle was rotated once around to sever the base of the specimen and either the inner needle was withdrawn alone or both needles were withdrawn together. The specimen was then fixed in 10 per cent formalin and prepared as a routine pathologic specimen.

This procedure was performed with special caution on patients with hemorrhagic tendencies. Attempts were made to insure a normal clotting mechanism before the biopsy was made.

A total of 32 punch biopsies of the liver were attempted on our 24 patients (table 1). Of the 8 multiple specimens, 6 were obtained by a second biopsy and 2 by a second and third biopsy on a patient. In 15 of the 24 patients, the biopsy served to confirm or establish a diagnosis of the cause of hepatic enlargement. In 7 patients the punch biopsy was not helpful, and in one the results were misinterpreted by the clinician, in another by the pathologist. One of the latter patients was No. 20 (E. L.) who had a biopsy diagnosis of "subacute hepatitis with early cirrhosis" and a clinical diagnosis of portal cirrhosis of the liver. Her enlarged liver subsequently was shown to be due to chronic passive congestion as it diminished markedly in size after partial removal of a constricting pericardium. The other misleading case was No. 2 (L. H.) with a clinical diagnosis of either portal or biliary cirrhosis. The punch biopsy showed changes compatible with portal cirrhosis, but subsequent biopsy at laparotomy and autopsy examination both were typical of biliary cirrhosis.

In one patient in whom metastatic carcinoma of the liver was suspected, 3 biopsies were attempted but the only specimen of liver obtained was reported as "liver, showing pigmentation and atrophy." Subsequent autopsy revealed an ade-

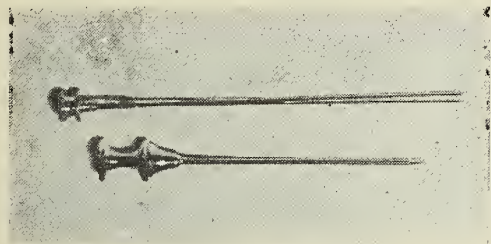


Fig. 1. Vim-Silverman needle.

only on patients with a palpable enlargement of the liver and, if ascites was demonstrable, a routine abdominal paracentesis was performed. It was believed that withdrawal of fluid made the liver more accessible and its contours more easily ascertained. The bowel probably is prevented from floating anterior to the liver and being transfixed by the biopsy needle. No premedication was used; it was desired not to mask symptoms that might indicate complications following the procedure.

The patient was placed in the recumbent position. The most common site chosen was below the right costal margin, lateral to the midclavicular line, but always directly over the enlarged portion of the liver. A 1 per cent novocaine solution was introduced into the skin and the underlying subcutaneous tissue by means of a three inch twenty-two gauge needle. This needle was pushed down to the peritoneum and then introduced into the enlarged liver where moderate suction was employed to test for the presence of an abscess, hematoma, or hemangioma. The patient was instructed

TABLE 1.

<i>Patient</i>	<i>Sex</i>	<i>Age</i>	<i>Clinical Impression</i>	<i>Diagnosis from Liver Biopsy</i>	<i>Confirmatory Evidence</i>
1. M.B.	F	72	(1) Carcinoma of liver, primary or metastatic. (2) Gumma. (3) Hydatid cyst of liver.	Skin (first biopsy). Carcinoma, poorly differentiated, in scar tissue (second biopsy).	Autopsy: primary adenocarcinoma of the liver.
2. L.H.	M	45	(1) Biliary cirrhosis. (2) Portal cirrhosis.	Early cirrhosis of the liver, probably portal rather than obstructive in type.	Laporatomy biopsy: biliary cirrhosis. Autopsy: biliary cirrhosis.
3. J.R.	M	38	Portal cirrhosis.	Histologic pattern consistent with cirrhosis.	
4. C.S.	M	58	Cirrhosis of the liver.	Fatty metamorphosis and bile stasis of liver tissue.	
5. H.M.	M	71	Carcinoma of head of the pancreas with incomplete biliary obstruction.	Dilated bile ducts filled with inspissated material, best explained by obstruction.	Roentgenologic evidence of carcinoma of the pancreas invading the pylorus of the stomach.
6. C.H.	M	62	Metastatic carcinoma of the liver.	Liver tissue with excessive brown pigment.	X-ray examination revealed carcinoma of the cecum.
7. A.D.	M	57	(1) Chronic myelogenous leukemia. (2) Chronic arsenic poisoning with liver degeneration.	Normal liver tissue (first biopsy). Acute hepatitis, minimal (second biopsy).	Skin biopsy revealed arsenical pigment.
8. H.G.	M	40	(1) Infectious hepatitis. (2) Biliary cirrhosis.	Necrosis and subacute inflammation of liver tissue; probable subacute hepatitis.	
9. E.S.	F	32	Carcinoma of the pancreas.	Normal liver tissue.	Laporatomy biopsy: subacute hepatitis and chronic cholangitis.
10. L.L.	M	62	Metastatic carcinoma of the liver.	Undifferentiated carcinoma in liver.	
11. F.H.	M	70	Metastatic carcinoma of the liver.	Liver showing pigmentation and atrophy (first biopsy). No adequate specimen (second biopsy). No adequate specimen (third biopsy).	Autopsy: adenocarcinoma of the pancreas with metastasis to liver.
12. E.P.	M	72	Chronic passive congestion of the liver.	Hepatic cells present in large numbers are compressed by surrounding reticulum and sinusoidal walls.	
13. E.F.	M	49	Metastatic carcinoma of liver.	Malignant neoplasm, type undetermined.	
14. E.S.	F	30	(1) Metastatic carcinoma of liver. (2) Primary carcinoma of liver. (3) Cirrhosis of liver	Minimal evidence of hepatic injury (first biopsy). Normal liver tissue (second biopsy).	
15. M.L.	F	57	Metastatic carcinoma of liver.	Normal liver tissue.	
16. N.W.	M	32	(1) Acute infectious hepatitis. (2) Portal cirrhosis of liver.	Bile stasis, fatty metamorphosis of liver.	
17. C.T.	M	43	(1) Hodgkin's disease. (2) Brucellosis.	Normal skeletal muscle (first biopsy). Focal necrosis of liver (second biopsy).	Autopsy: Brucella suis endocarditis; degeneration and atrophy of liver cells in central area.
18. A.K.	M	64	Carcinomatosis with metastasis to liver.	Adenocarcinoma in liver (first biopsy). Adenocarcinoma in liver (second biopsy).	

Patient	Sex	Age	Clinical Impression	Diagnosis from Liver Biopsy	Confirmatory Evidence
19. E.B.	M	55	Chronic passive congestion of liver.	Normal skin tissue.	Autopsy: cardiac cirrhosis.
20. E.L.	F	17	Portal cirrhosis of liver.	Subacute hepatitis with early cirrhosis.	Operation: calcification of the pericardium; probable chronic passive congestion of liver.
21. G.G.	F	63	Carcinoma of liver, primary or metastatic.	Adenocarcinoma in liver.	Autopsy: adenocarcinoma of the pancreas metastatic to liver.
22. E.F.	F	64	Carcinoma of liver, metastatic.	Undifferentiated carcinoma of the liver.	
23. J.H.	M	69	Carcinoma of the lung with metastasis to liver.	Poorly differentiated carcinoma of the liver (first biopsy). No specimen (second biopsy).	
24. R.T.	M	72	Chronic arsenical hepatitis.	Focal hepatitis, chronic, non-specific.	

nocarcinoma of the pancreas with metastasis to the liver. On one occasion skin was obtained and on another, normal skeletal muscle; however, a second biopsy in each instance was definitive.

We encountered none of the reported complications of punch biopsy of the liver except for some slight pain at the site of biopsy and, in one instance, pain in the right shoulder for a few hours after biopsy. On two occasions surgical exploration was carried out within two days of the punch biopsy. There were six autopsies performed four or more days after the liver biopsy. In no instance was there any evidence that bleeding, tearing of the capsule of the liver, or infection had occurred as a result of the procedure.

Summary: Punch biopsy of the liver is a procedure which often permits the establishment of a definite diagnosis in hepatic disease.

It is a procedure not without risk to the patient, and therefore it should be used only after careful evaluation of the advantages to be gained.

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VAGINAL SMEAR IN THE DIAGNOSIS OF GYNECOLOGIC CANCER

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Inquiries have been received from many physicians throughout the state concerning the present status of the vaginal smear technic in the diagnosis of gynecologic malignancies. It is our purpose to outline the problem as it exists today and to offer a preliminary report of studies being carried on at the State University of Iowa.

Clinical success in the management of cancer depends on many factors—the type, the location, and the extent of the tumor being of prime consideration. There are some malignancies such as leukemia which are systemic in their effect and, in general, run their course essentially uninfluenced by our ministrations. At the other end of the scale are localized skin cancers which are of low grade malignancy and will respond to a variety of simple procedures. Other tumors are relatively localized and exert their malignant effect by interfering with the function of the essential organ which forms the site of the tumors. This is exemplified by neoplasms in certain areas of the brain, the liver, the adrenals, and other similar vital organs.

By far the majority of malignant tumors, however, develop in tissues which are not essential to life but lead to a fatal outcome by metastasis or direct extension to overwhelm the body. Cancer of the breast is a common example of this group. Here the most important factor in successful management is the duration or extent of the neoplasm. The breast has no essential function, it is acces-

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sible to palpation, its complete removal is not technically difficult nor attended by great risk, and yet women die of cancer of the breast due primarily to the extent of the tumor when the patient seeks medical care. There are many papers dealing with the treatment of cancer of the breast, each lamenting the extent of the tumor when seen and offering some technic as a forlorn hope to compensate for this delay in instituting treatment.

Since this situation exists with regard to an accessible organ like the breast, it is not surprising to find a similar yet more extended problem in the female genital system where the organs are concealed and the usual signs and symptoms of early malignancy, bleeding and discharge, are indistinguishable from the menstrual function of these organs.

The uterus (body and cervix) is not an essential organ, and its complete removal even by radical means is not attended by too great risk. Why then the poor results from the treatment of carcinoma of the uterus? The answer lies almost entirely in the stage of the malignancy when treatment is instituted. The extent of the tumor is a product of the rate of growth and time. Most tumors exist in an early or curable state for several months. Until the past few years the medical profession has devoted its energies to finding ways to compensate for this lost opportunity. While our results have improved over the past forty years, there has been very little gain in the last decade.

In 1943, Papanicolaou and Traut reported a new method for the detection of cancer in some areas. It is based on an old observation that tumors growing in a cavity or on the body surface desquamate abnormal cells, and with proper preparation and staining these cells can be identified as malignant by one skilled in this field.

This technic has long been used in the study of ascitic fluid. It has now been expanded to include sputum, stomach washings, urine, and vaginal discharges. The proper preparation and interpretation of these slides is a highly skilled specialty requiring some training and much experience.

In the summer of 1946, the Department of Obstetrics and Gynecology at the State University of Iowa undertook to investigate this new approach to the problem of gynecologic cancer. The Iowa Cancer Society offered its support and a research grant to establish a laboratory for evaluation of this method in the field of gynecology. The laboratory at the University will be the fourth established in the country. It is our plan that this laboratory will serve both as a research and diagnostic unit. At present, our funds and incompletely trained per-

sonnel will limit us to the research aspects of the over-all plan.

That cancer cells can be found in the vaginal smears is firmly established. It is our tentative opinion, however, that the vaginal smears will never replace a careful gynecologic examination and biopsy (punch for cervix and dilatation and curettage for body) in the diagnosis of genital malignancy. Will the vaginal smear serve as a means of detecting cancer when it is not suspected from the routine examination? Can it be used to discover cancer where symptoms are minimal or absent or in patients who would not ordinarily submit to pelvic examination? These are the questions which our research program is attempting to answer.

The desirability of this approach has been amply demonstrated by public health departments the country over. It is sound financially, medically, and socially to detect disease in its occult and

TABLE I

NO. CASES	SMEAR			BIOPSY
	Positive	Susp.	Neg.	Positive
65 Patients with Symptoms	16	9(1)	40	17
103 Asymptomatic women	3	4(2)	96	3
25 Return Carcinoma Patients	13(3)		12(4)	14-Clinical Recurrence 11-No Recurrence

1. One patient proved to have malignancy.
2. Not checked yet.
3. One positive smear obtained from patient without clinical evidence of recurrence (no biopsy).
4. One patient had clinical evidence of recurrence (no biopsy).

usually curable stages. Examples of this are found in the routine use of serologic tests for syphilis. It is well established that it is cheaper, medically sound, and socially desirable to detect and treat a latent luetic man rather than to care for his luetic children, his wife with paresis, and himself with luetic heart disease. The tuberculin test has likewise an established place in the screening of a community for tuberculosis. Can the vaginal smear serve as a similar "screening test" for genital malignancies? Our preliminary observations offer some encouragement to this end.

To date, three hundred slides from 200 patients have been studied. From this experience, certain factors have become apparent.

In the taking of the smears and the preparation of the slide, several problems appear. In order to get an adequate sample of upper vaginal discharge, it is necessary to use a speculum or an applicator protected by a sheath. Vaginal douching, recent coitus, or surgical jelly interfere with proper sam-

pling and reading of the slide. The slide must be fixed at once in an equal mixture of 95 per cent ethyl alcohol and ether and must not be allowed to dry. Staining, at present, is done by the Papanicolaou technic. Various modifications of the technic for preparing and staining slides are being studied, and it is hoped that a simple procedure can be developed.

These slides were obtained from three groups of women—patients with symptoms suggestive of malignancy (bleeding or discharge), patients with no pelvic symptoms, and those who had been treated for malignancy. The data from these patients are presented in the table. In the reading of these slides, the cytologist catalogued the smear in three groups—negative, suspicious, and positive.

Sixty-five women were studied who had symptoms compatible with cancer, that is, bleeding and discharge. The vaginal smears from these patients were read as 16 positive, 9 suspicious, and 40 negative. Biopsy confirmed the diagnosis in the positive group and established the presence of cancer in one patient in the suspicious group. All other patients were negative.

Slides were taken on 103 women who were without symptoms of genital malignancy. Routine pelvic examination had revealed no malignancy. There were three positive and four suspicious smears from this group. The three patients with positive smears were subjected to biopsy and found to have carcinoma: two cervical carcinomas in situ and one adenocarcinoma of the body. The four suspicious cases have not yet been checked.

The third group consisted of 25 patients who had previously been treated for carcinoma and had returned for routine checkup. Clinical examination revealed recurrence in 14 of these women and the vaginal smear was in agreement 13 times. The smears from the 11 women who showed no clinical evidence of recurrence were negative in ten instances.

It must be emphasized that this is only a small series. However, the discovery of three patients with unsuspected malignancy in the clinically free group shows that the method is worthy of further study.

These observations have afforded considerable experience and serve as a basis for the development of the plan of study. It is proposed to screen all women over thirty entering the University Hospital and the female inmates of the state institutions. Previous studies have all been made on highly selected populations among women who consulted gynecologists. Here the results are good. Accuracy of this method when general populations are surveyed will be reported later.

As the program develops, it is hoped that the services of the University laboratory can be made available to the physicians of the state. At the present time the limitations of trained personnel, budget, and facilities preclude such an expansion.

PHYSIOLOGIC BASIS FOR THERAPEUTIC TRENDS IN NEUROMUSCULAR DYSFUNCTION

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During the past several years research has been conducted in the State University of Iowa laboratories to evaluate the efficacy of postulated therapies for neuromuscular dysfunctions. This report will define the extent and summarize the results of the experimentation and clinical observation.

The plan has been to reproduce in laboratory animals by experimental procedures functional disorders of the neuromuscular system comparable to clinical states. All of the conditions of clinical dysfunctions, however, have not been satisfactorily produced. Therefore, information concerning these conditions must be obtained from clinical sources alone. The therapies most frequently employed for neuromuscular dysfunctions may be classified as physical, nutritional, or drug. The recent emphasis on physical medicine has resulted in renewed interest in all possible applications of it to neuromuscular disorders. The recognition that the passage of the stimulus across the myoneural junction is dependent upon or associated with the liberation of a chemical mediator has stimulated the use of drugs which may increase or decrease the concentration of acetylcholine at the end-plates and thus either enhance or lessen the degree of natural muscle activation.

Myotonia Congentia—

This functional disorder characterized by increased muscle tone and sluggish relaxation following voluntary and reflex contractions is without demonstrable histologic pathology. The persistence of tone and shortening is thought to be due to a local production of repetitive impulses made possible by disturbed conditions of excitability and conduction. Prostigmine, emotional outbreaks, and cold aggravate the condition whereas heat, quinine or quinidine, promote relaxation in the hypertonic and contracted muscles.

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Myasthenia Gravis—

This disease is marked by excessive and early fatigue in skeletal muscles. The functional disorder which occurs at the myoneural junction is probably related to the humoral transmission of the nerve impulse. It has been ascribed to defects in the production, release and destruction of acetylcholine. Drugs which inhibit the activity of cholinesterase often give marked improvement in muscle strength and endurance by prolonging the action of acetylcholine liberated at the myoneural junction. Neostigmine combined with atropine to counteract undesirable side effects has been used with the most success. Its effect is somewhat transitory and in no sense curative. Di-isopropyl-fluorophosphate, another anticholinesterase substance, elicits a more prolonged reaction than does neostigmine, but it is less effective in bringing about improvements in muscle strength and endurance. Thymectomy has been followed by relief or cure in some cases but without demonstrable results in others. No type of physical therapy has been found efficacious for this disorder.

Muscular Dystrophy—

This disease of unknown etiology is characterized by muscular weakness, atrophy, and degeneration. A comparable condition occurs in skeletal muscles of animals deprived of vitamin E either by dietary deficiencies or by destruction within or failure of absorption from the gastro-intestinal tract. The lesions associated with experimentally produced nutritional muscular dystrophy can be prevented, arrested, or healed by the administration of adequate amounts of vitamin E. However, there is much evidence which states that a lack of vitamin E is in no way responsible for lesions peculiar to clinical dystrophy. The progress of the disease is neither arrested nor modified by repeated administration of large amounts of vitamin E.

Claims have been made in the past by several investigators that administration of large amounts of the amino acid, glycine, tended to improve the condition of patients with clinical muscular dystrophy and in normal individuals lessened fatigue and improved endurance. Carefully controlled studies, however, have not verified these claims for the effects of glycine. The alleged effects of this dietary component can best be attributed to psychical and training factors. During the height of the enthusiasm for glycine therapy its efficacy upon the performance of athletes was tested. One-half of the members of the cross-country team were given glycine while the other half received a placebo of sugar. The coach was reluctant to communicate with us for some time because the team

finished in last place at a conference meet. He became reconciled when the nature of the controls was explained and convinced that glycine could hardly have been responsible for the poor showing of the entire team.

The administration of adrenalin and ephedrine has been found to give a transient improvement in the strength of fatigued muscles of normal individuals and in the strength and endurance of patients with muscular dystrophy. The effects are of short duration and accompanied by undesirable side reactions which discredit the use of these drugs in the treatment of this disease. Thus it appears that no drug, dietary factor or physical measure has been discovered which is of proved efficacy in the treatment of this form of muscular disorder.

Muscular Atrophy—

Atrophy of skeletal muscle may be defined as a condition in which a loss of weight and substances associated with the function of contraction occurs. There is a decrease in the mass of the muscle-cell phase and a concomitant increase in the amount of connective tissue and fat. The conditions under which atrophy is found are numerous. It is a common finding in states of fasting and malnutrition, during prolonged immobilization and extreme inactivity, during prolonged states of spasticity and contracture, following tenotomy, and after injury of the lower motor neuron. The removal of the basic causative factors and subsequent operation of the normal regenerative processes have been found to be the most effective treatment in many of these cases.

Atrophy following peripheral nerve injuries and anterior horn cell destruction is often severe, prolonged and, under certain conditions, irreversible. The nature of the functional disturbances associated with denervation atrophy and the general belief that the extent of final recovery is proportional to the brevity of the period of functional denervation have encouraged the search for therapeutic measures that might delay atrophy and hasten the onset of functional reinnervation. These for the most part fall into the classification of either drug or physical agents.

The view was held for many years that denervation atrophy was due to exhaustion from the presence of constant fibrillary activity in the muscle fibers. Experimentation with atropine and quinine, drugs which lessen or abolish the fibrillary activity, has proven them ineffective measures for the treatment of atrophying muscles. There is also much experimental evidence which indicates that fibrillary activity is not the cause of atrophy.

A search has been made in another direction for

agents such as drugs, vitamins and hormones which in some way might accelerate the process of re-innervation and thereby bring about an arrest and early reversal of the denervation atrophy. In experimental animals subjected to a crushing lesion of the tibial nerve, mecholyl, acetylcholine, potassium, neostigmine caffeine, parathyroid hormone, glycine and excess intakes of vitamins, biotin, B complex, C and E were administered. It was found that all failed to affect the rate of atrophy, the time of onset of initial functional reinnervation or the rate and extent of subsequent regeneration.

These extensive negative experiments offer little encouragement for the successful treatment of peripheral nerve injuries by chemical agents or by nutritional therapy provided the diet is adequate for the organism as a whole.

In contrast to the negative results with drug and diet treatment, the response to physical therapy is encouraging. It is well established that electrical stimulation and massage are beneficial to denervated muscles in laboratory animals. Massage has little effect upon the rate and extent of atrophy but maintains a better functional condition in the affected muscles. Electrical stimulation serves to lessen the weight decrement. The modality of effective treatment necessitates application of brief and frequent stimuli sufficiently intense to elicit maximal tension development in muscles treated under conditions of maximal load and stretch. We have found that while excessive activity and fatigue did not prove detrimental to the over-all recovery from peripheral nerve injuries, they were without effect upon the rate of nerve regeneration. A larger mass of muscle was preserved and maintained in a better functional state. Thus the regenerating nerves made functional contact with a larger and functionally superior contractile machine than would be possible in untreated muscles.

Experimental evidence pointed out that nothing was to be gained by continuing the electrical treatments after onset of functional reinnervation. After voluntary movement patterns have returned, the process of further regeneration and re-education should be delegated to the natural activation of muscles by means of graded exercises. Our studies showed that a program of activity was highly beneficial and that immobilization and inactivity were detrimental to the recovery from peripheral nerve injury. It is to be pointed out that the stimulus pattern which we found to be most effective for the retardation of atrophy in the muscles of animals was too painful to be tolerated by the unanesthetized animal or patient. Most commercial types of stimulators are relatively ineffective as a means of retarding atrophy, for

they fail to deliver stimuli of the intensity required to evoke maximal contractions in paralyzed muscle. Investigators at Northwestern University, however, have reported encouraging results with a stimulus pattern which can delay atrophy and yet be tolerated by the unanesthetized patient. Another possible use of electrical stimulation may be in the development and restoration of functional pathways. For this purpose it is entirely possible that stimuli of lesser intensity than those required to effectively delay atrophy may be employed on patients without causing appreciable discomfort.

It is beyond the scope of this paper to review in detail the numerous clinical disorders associated with states commonly referred to by such terms as muscle spasm, spasticity, rigidity, reflex hypertonus, myotonic and myostatic contractures. Some of these conditions which can be abolished by deep anesthesia or nerve section are of the nature of an imbalanced and overstimulation of the muscles. In other conditions the persistence of the shortened and rigid states is not dependent upon the flow of nerve impulses and therefore not abolished by anesthesia or nerve section. The mechanisms responsible for reflex hypertonus and rigidity are numerous and complicated. They may involve over-activity of excitatory patterns or blocking of the inhibitory mechanisms. The persistence of the spastic state is associated with marked atrophy and functional damage to the affected muscles. It is obvious from the physiologic standpoint that little would be expected from drug therapy in those conditions which are not dependent upon the flow of nerve impulses, but it is plausible to expect some benefits from drugs which by synaptic block would lessen the degree of muscle stimulation.

In this direction d-tubocurarine (curare) and neostigmine have been employed for the treatment of various clinical states of spasticity. It appears as if large doses of either of these drugs will bring about a temporary abatement of reflex hypertonus and spasticity. The question as to the over-all benefits from treatment does not appear to be conclusive. In experimentally produced tetanus toxin contractures we have found neostigmine, d-tubocurarine and ammonium chloride therapy ineffective for lessening the spasticity and damage to muscles. In the case of the curare drugs, the margin is slight between the doses required to abolish reflex hypertonus and those which produce respiratory paralysis. No general agreement exists concerning the effectiveness of the much safer drug, neostigmine. However, we have found passive manipulation and electrical stimulation to be more effective therapies for lessening the damage to muscle in this experimental condition. Some

clinicians have recognized the limitations of curare therapy and have employed it only to give sufficient relaxation in order to permit a more efficient application of physical measures such as manipulation and massage. It is apparent that more extensive and carefully controlled studies will have to be made before any conclusion can be drawn as to the efficacy of drugs for the treatment of clinical spastic states. There is a paucity of information concerning the modality of effective physical therapy.

In reviewing the experimentation thus far, it might be assumed that drug therapy is temporarily beneficial in conditions of myotonia congenita, myasthenia gravis and some states of spasticity. There appears to be no specific nutritional therapy which is of value in conditions other than in those in which a deficiency per se is responsible for the disorder. Physical therapy in the form of heat, massage and electrical stimulation appears to offer the most satisfactory means of treating experimental conditions of neuromuscular dysfunction. This would tend to encourage an extension of its trial in clinical neuromuscular dysfunction.

This report has presented a review of the recent trends in experimental therapy for neuromuscular dysfunction with emphasis upon the results and work carried on in this laboratory. Although individual contributions and references have been sacrificed here for brevity, they have been fully acknowledged.

THE DIAGNOSIS AND TREATMENT OF CONGENITAL SYPHILIS

Fredric E. Simpson, M.D.

The most satisfactory means of making a diagnosis of congenital syphilis is by the blood Wassermann test. It is nearly always strongly positive when congenital syphilis is present. However, Wassermann tests performed on blood from the placental cord and blood drawn from infants under two months of age require some interpretation. Passive transfer from a syphilitic mother of fixing substances through the placenta is possible so that a positive Wassermann reaction may be obtained without the infant being infected.¹ The fixing substances passively transferred from the mother gradually disappear and usually are not present after two months of age. The Wassermann reaction would then be negative unless the infant actually has syphilis. Therefore, without clinical evidence of syphilis, a definite diagnosis could not be established until the infant

is about eight weeks old. If the blood Wassermann reaction is negative at two months of age, the infant does not have syphilis; if positive at two months of age, it can be assumed that the positive reaction is due to the action of the spirochetes in the infant and that the infant actually has syphilis. An infant may have a negative cord or blood Wassermann reaction at birth or shortly after birth and still have congenital syphilis. In such an instance, the infant was presumably infected late in the period of gestation and not enough time has elapsed for a positive reaction to be obtained. If congenital syphilis is present, a positive Wassermann reaction could be expected by the time the infant is two months old. In general, therefore, a blood Wassermann test is not reliable in making a diagnosis of syphilis in an infant until the age of two months. However, if the reaction is positive before this time, a rising titer suggests a syphilitic infection while a falling titer suggests syphilis is not present.

As with the blood Wassermann test, the spinal fluid Wassermann test provides the best means of diagnosing congenital neurosyphilis. If the spinal fluid Wassermann reaction is ever to be positive, it is usually positive by about six months of age. Since neurosyphilis can be present without clinical evidence, all children with a positive blood Wassermann reaction or clinical evidence of syphilis of tissue other than the central nervous system should have this test performed.

There are other means of detecting congenital syphilis in an infant. Infants born from syphilitic mothers should be examined carefully at birth and observed closely for evidence of this disease in addition to the use of the blood Wassermann test. However, it must be remembered that many infants present no clinical evidence of syphilis even though they may have the disease.

The more frequent lesions of early syphilis appear commonly between one and two months of age but may occur any time during infancy or later in some instances. The majority of lesions have appeared by five months of age, however, if they are ever to be present. Skin lesions are the most common findings. Induration and reddening of the palms and soles is a common early secondary manifestation of congenital syphilis. A generalized maculopapular rash which may be intense is frequently seen. Rhinitis (snuffles) is another frequent finding. Bone lesions such as epiphysitis, periostitis and dactylitis are other signs of early congenital syphilis. Splenomegaly and generalized lymphadenopathy are sometimes found. Hepatomegaly is present infrequently.

Neurosyphilis may be manifested clinically by signs of meningeal irritation such as neck rigidity

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and a positive Kernig's sign. Neurosyphilis should be considered in the differential diagnosis of convulsions and hydrocephalus as it can be a cause for both conditions.

Late in infancy or early in the second year of life, late secondary skin and mucous membrane lesions sometimes appear. These lesions are also called recurrences. Of this group condylomata, papular and serpiginous lesions are most commonly seen. Occasionally mucous patches are found.

Dark field examination of serum expressed from cutaneous lesions may reveal spirochetes and lead to early diagnosis. Roentgenographic evidence of syphilis may be obtained by examination of long bones. Such examination should not be forgotten when syphilis is suspected, as it is often an aid in early diagnosis.

In latent syphilis, the stigmata of syphilis may be found which will lead one to suspect a congenital syphilitic infection. The stigmata are a result of the action of the spirochetes. Dystrophy of the teeth, of which Hutchinsonian teeth constitute one type, may be seen. The remains of an interstitial keratitis and chorioretinitis (salt and pepper fundus) may be found. Perioral scarring (rhagades) and syphilitic bone changes leading to "saddle nose" and saber shins are other stigmata. Blindness due to optic nerve atrophy and deafness due to eighth nerve involvement can be the result of congenital syphilis. Hutchinson's triad, i.e. deafness, interstitial keratitis and Hutchinson's teeth, is seldom seen as such. When any stigmata of syphilis are seen, a blood Wassermann test should be performed. It should be remembered that other conditions can give rise to much the same findings in certain instances. Interstitial keratitis is a common lesion in late congenital syphilis and is often the condition that brings the child to the attention of the physician. When certain neurologic conditions are seen such as hemiplegia, mental deficiency, meningitis and epilepsy, neurosyphilis should be suspected as a possible cause.

The older child, just as the infant, may be infected with congenital syphilis and present no clinical findings or symptoms. The blood and spinal fluid Wassermann tests must then be relied upon in making a diagnosis.

Treatment of congenital syphilis should not be instituted until a definite diagnosis has been established; then it should be started at once. The destructive action of the spirochetes is halted very soon after treatment has begun. Also the length of time for cure depends to a great extent upon the age at which the treatment is started.

Many drugs have been used for treating syphilis but at the present time the most commonly used drugs are bismuth, mapharsen and penicillin.

Other drugs which are still in use are effective and should be mentioned; these are mercury and the arsenicals, arsphenamine, neoarsphenamine, sulfarsphenamine, tryparsamide and acetarsone. Iodides have no spirocheticidal action but are useful in some situations.

Of the bismuth preparations, bismuth subsalicylate seems most satisfactory. It is given in an oily suspension which is slowly absorbed. It may be given once or twice weekly. For routine use a satisfactory dose is one grain under three years of age and two grains for older children. It must be given intramuscularly and care must be taken that a vein is not entered when the injection is given. Albuminuria is an early sign of toxicity.

Mapharsen is a satisfactory arsenical for use in treating congenital syphilis. It is thought to be not so effective as arsphenamine, but use of the latter presents several technical difficulties. It is reported to be less toxic than neoarsphenamine. Mapharsen can be easily prepared for use in the physician's office by dissolving the substance in distilled water. A safe dilution is 60 mg. to 10 cc. of water. The dosage is 1 mg. for each kilogram of body weight. It must be given intravenously, and rapid injection is desirable to prevent pain along the course of the vein. If injection or extravasation occurs outside of the vein, painful induration is likely to appear.

Penicillin is the drug most recently added to the list of spirillicides. It has been in use too short a time to allow full evaluation. It has been definitely established that it has a place in treating early congenital syphilis. It has been found not so effective in treating latent congenital syphilis, but it is thought to be of value. Several investigators have used penicillin alone in treating early congenital syphilis with reported cures in over two-thirds of the patients.² In the remainder the results have been uncertain as yet or unsatisfactory with some relapses occurring. Because of these findings, it seems best not to rely on this drug alone in treating congenital syphilis but to use it as an adjunct to other forms of treatment as with bismuth and mapharsen. The optimum dosage of penicillin and the length of course of treatment with this drug have not been established. One plan is to give 20,000 units intramuscularly every three hours for ten days regardless of age. Some investigators² have advised dosages of at least 100,000 units for each kilogram of body weight for treating young syphilitic infants, given intramuscularly over a twelve to fifteen day period. Many reactions to the use of this drug in treating young syphilitic infants have been reported.^{3, 4, 5} Among these have been vomiting, diarrhea, fever, cutaneous reactions, and near fatal collapse.

Deaths have been reported during the first course of treatment with penicillin, but whether penicillin played a part in these deaths is not clear and seems unlikely in many instances.^{3, 4, 5} When used alone in treating early congenital syphilis some authors have stated that full doses could be administered at once without danger.^{2, 5} This has been done with apparently no ill effects, but since a severe therapeutic shock could be fatal to an infant it would seem much safer to precede the use of penicillin with reduced doses of bismuth. Routinely in our clinic infants with syphilis receive reduced doses of bismuth followed by a few reduced doses of mapharsen and bismuth before penicillin is used.

Fever therapy is of special benefit in congenital neurosyphilis which has not responded to the usual forms of therapy. Fever therapy can be given by fever cabinet or by malaria. Pure tertian type of malaria only should be used if malaria treatment is chosen. If some form of chemotherapy is administered concurrently, the beneficial effects of the fever therapy are enhanced.

Many satisfactory treatment schemes can be devised. One scheme⁶ for routine care is to give bismuth intramuscularly once each week continuously while one of the arsphenamines is given once a week for three to five doses concurrently with bismuth, repeating the series every two months. If penicillin is used in this plan, a course of penicillin 20,000 units intramuscularly every three hours for ten days every eight weeks seems advisable. The above method could be carried out by treatments given in the physician's office except for penicillin therapy.

When a child cannot visit a physician regularly for treatment, another plan can be used. At the State University of Iowa Hospitals where children are brought from over the entire state, the following treatment scheme is employed routinely. Mapharsen is administered every other day for five doses and bismuth subsalicylate concurrently with mapharsen on the first, third, and fifth treatment with mapharsen. At the same time, 20,000 units of penicillin in saline solution is given intramuscularly every three hours for ten days. The entire treatment plan is repeated every six to eight weeks.

Regardless of treatment scheme, reduced dosage should be used when starting treatment of the disease. This is most important when treating infants with florid syphilis. The dosage must be individualized according to the patient's condition. Bismuth in small doses is a safe drug to use first, followed by reduced doses of mapharsen and later penicillin.

Massive dose therapy⁷ has been used successfully in treating congenital syphilis even in infants, but its use does not seem to be warranted because of the risks involved and technical difficulties it presents.

Treatment should be continued until the blood Wassermann test is negative for six months for infants and one year for older children to insure complete cure. Under continued treatment without rest periods, all children whom we have been able to follow in our clinic have obtained a negative Wassermann reaction. The time involved for a cure varies from about one year in infants to several years in older children. More time is usually required to cure a child with congenital neurosyphilis than when the central nervous system is not involved.

Reactions to arsenicals must be kept in mind. Jaundice, acute yellow atrophy, encephalitis, agranulocytosis, and severe cutaneous reactions are the most serious. BAL (British Anti Lewisite)⁸ has been reported as effective against such reactions. Even though BAL is used, it seems advisable that other forms of therapy should be used concurrently, depending upon the condition, as epinephrine and magnesium sulfate in toxic encephalitis.

Urine examinations and white blood cell counts should be done repeatedly during the course of treatment. Blood Wassermann tests occasionally and spinal fluid Wassermann tests at long intervals are indicated to determine status of treatment.

Summary

A few brief points in the diagnosis of congenital syphilis have been presented and a discussion of present day treatment is given.

The diagnosis of syphilis is best made by means of the blood and spinal fluid Wassermann tests. The blood Wassermann in general is not reliable as a diagnostic test until an infant is two months old. Clinical evidence, dark field examination, and roentgenograms are means of aiding in diagnosis.

Of the many drugs effective against the spirochete, bismuth, mapharsen, and penicillin seem most desirable. Penicillin has been reported effective in curing early congenital syphilis when used alone but some unsatisfactory results occur. At present it seems best that it be used as an adjunct to treatment with bismuth and mapharsen. Reduced doses of bismuth and mapharsen should be used when instituting treatment, followed by penicillin, especially in early florid congenital syphilis.

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SPECIAL ARTICLE

PSYCHIATRIC NEEDS OF GENERAL HOSPITALS

Paul E. Huston, M.D., and
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In the present period of expansion of medical services, which includes new hospital construction, provision for adequate psychiatric facilities should be seriously considered. The need for these facilities became much more apparent during the world war. Many illnesses, previously often thought of as purely physical in character, were found to be the expression of emotional disturbances. Also it became clearer that many physical disorders had important emotional complications. The recognition of these facts has re-emphasized the great frequency of psychiatric and psychosomatic illnesses. Approximately 1 out of every 25 persons develops a psychosis; 12 out of every 25 develop other psychiatric disorders including psychoneurotic and psychosomatic disturbances.³ State mental hospitals are organized for the care of the first group, the 1 out of 25, and not the other groups, the 12 out of 25, which constitute by far the major therapeutic problem.

In addition to the frequency of psychiatric disorders, justification for inclusion of psychiatric facilities in general hospitals is found in recent changes in therapy. Many psychiatric conditions can now be treated satisfactorily in a few weeks. Hardly five years ago 50 per cent of all patients suffering from involutional melancholia committed suicide or died and the other 50 per cent recovered after being ill an average of four years. Now, as a result of electric shock therapy, the recovery rate is 85 per cent with an average treatment period

of four weeks. Other types of depression respond as well and as rapidly. There is hope for improvement in some cases of schizophrenia with the use of insulin coma and electric shock. As in any malignant condition, the prognosis in this disease becomes progressively poorer with delay in treatment. Most toxic psychoses respond quickly to adequate therapy. Many of these occur in the general hospital following delivery, surgical operation, and drug administration. The fever therapy of general paresis should likewise be included. Many psychoneurotic and psychosomatic patients, who constitute the bulk of psychiatric morbidity, profit immeasurably from a short period of hospital care. In fact, if these patients have not been ill too long, about 75 per cent respond with complete recovery or marked improvement. Finally, the majority of behavior problem children may be helped if special facilities for them are available.

Advantages to the Patient

The emotionally disturbed patient who goes to a general hospital has many advantages if the hospital is prepared to receive him. For relief he is not compelled to seek admission to a psychiatric hospital, which often he refuses to accept. This is particularly true of patients with psychoneurotic and psychosomatic disorders. Only a few of these many patients are receiving adequate treatment at the present time. *The only way they will receive this is in the general hospital.*

For those patients who must receive psychiatric care, there are also advantages from admission to a general hospital. They would not suffer the stigma of having been a patient in a mental hospital. Care in a general hospital would be accepted earlier and more readily. This would result in earlier diagnosis and treatment, and thus a higher recovery rate. The cumbersome, embarrassing and time-consuming legal procedures involved in admission to a state hospital would be avoided.

A very important advantage for all types of psychiatric patients is that they would have prompt access to other specialized services and various types of specialists. Frequently there are gynecologic, obstetric, internal medical, surgical and other problems complicating the psychiatric disorder. Special laboratory technics, including x-ray, needed for proper diagnosis and therapy are readily accessible. These technics and consultants may be important factors in treatment.

Advantages to the General Hospital

Before discussing the advantages of a psychiatric unit to a general hospital, it is worth indicating briefly the character of the unit. Usually a unit may be installed with relatively minor changes,

and its inclusion should be planned in new hospital construction. Experience has shown that about 10 per cent of the total number of general hospital beds will take care of the psychiatric requirements of a community. Profitable financial operation for the hospital indicates that the unit should not be much smaller than 25 beds.³ A unit of 24 beds might have six private rooms, five double rooms, and two four-bed wards. There should be a solarium and rooms for special therapeutic procedures and examinations. Two of the private rooms should be soundproofed for the care of noisy patients. The windows should not be barred but should have specially designed screens which take away the appearance of confinement and protect the occasional suicidal patient.

The successful operation of the unit depends more upon the personnel than upon the equipment. The chief of staff should be a psychiatrist qualified by the American Board of Psychiatry and Neurology. It is desirable that the visiting staff likewise meet those requirements. This staff is assisted by residents and interns. The chief of staff is responsible for the administrative details of the unit. The charge nurse should be specially trained in psychiatric nursing. In general, at any given time there should be on duty one graduate psychiatric nurse, two or more student nurses, one female attendant and two male attendants. A combined recreational director and occupational therapist is desirable to supervise the activity program which includes parties, dances, picnics, games, and handicrafts. A psychiatric social worker trained to gather historical material and to make environmental changes would shorten therapy and increase the turnover. The exact number of personnel will vary depending upon local conditions.

Reports on units of this type indicate that they are completely self-supporting and in some instances earn more than their share.¹ Apprehension is sometimes expressed that the unit would be noisy. Actually the noise level in a well-managed psychiatric unit is lower than in the rest of the hospital. Furthermore, the suicide rate is lower, e.g., the Psychopathic Hospital has had but one suicide in its twenty-six years of operation. Commitment and detention are not major problems. In units in other parts of the country, about 98 per cent of the patients are admitted on a voluntary basis. A court order committing the occasional patient who needs this may be obtained or he may be transferred to a state or private mental hospital.

There are a number of advantages to the general hospital in having a psychiatric unit. There is available a service for the prompt care of psy-

chiatric conditions which may develop in patients in the medical, surgical, obstetric, and other departments of the hospital. Also, competently trained psychiatrists are available for consultation when a psychiatric illness is suspected. This includes not only patients who may have a psychosis or a neurosis but also those who have psychosomatic illness. Under this last term are included cases in which emotional factors may be complicating or causing an organic condition such as asthma, peptic ulcer, colitis, tachycardia, headache, etc. It is stated that about 30 per cent of all illnesses are functional, that is, illnesses in which there is no recognizable organic syndrome. The vast majority of these persons are expressing an emotional disturbance physiologically which a good psychiatric history frequently reveals. Many of these patients respond promptly to psychotherapy. The practical result for the general hospital is more rapid diagnosis and treatment and therefore a shorter hospital residence per patient on services other than the psychiatric. One report indicates that three days per patient may be saved in this way.² Thus medical service is provided to more people with the existing facilities.

Another advantage is the educational value of training the house staff. Interns, residents, and student nurses should be rotated through the psychiatric service. This experience improves the physician's diagnostic accuracy. The intern or resident intending to engage in general practice gains particularly from this experience. Student nurses not only learn to handle psychiatric patients, but they become better medical and surgical nurses as they are able to appreciate the emotional complications of the patient's illness.

When the general hospital begins to care for all the medical problems of the community, i.e., the surgical, obstetric, gynecologic, internal medical, etc., including the psychiatric, it can be referred to more appropriately as a general hospital than at present.

Advantages to the Community

The value to the community of a psychiatric unit in a general hospital becomes obvious. The hospital is able to provide better medicine from every standpoint. The psychoneurotic and psychosomatic patients are given a more effective opportunity for relief. Most of the psychotic patients thus treated would never need state hospital care. Psychiatric units in general hospitals would therefore reduce community expenses involved in transporting patients to and from state hospitals and decrease the cost to the state in caring for patients in the state hospitals. The laity would become educated more quickly to accept the fact

that psychiatric illnesses are fundamentally medical illnesses, and the effect of this change in attitude would be to reduce the social stigma now attached to a mental illness.

Many of the physicians in the larger communities in Iowa have expressed a desire for psychiatrists to enter private practice in their localities. Apparently failure to respond to this desire is because of lack of adequate facilities for the private practice of psychiatry and not because of a dearth of psychiatrists. In the 25 years of training of residents in psychiatry at the Psychopathic Hospital, about 25 per cent have accepted educational or institutional positions and 75 per cent are in private practice. Of the latter group, only one physician or 2 per cent of the total are in private practice within the state, the others having gone to other parts of the country where psychiatric facilities were available. Many of these were native Iowans who would have preferred to practice in their home state. *If the general hospitals in the larger communities will develop psychiatric units, there is no doubt that psychiatrists will be attracted and thus these communities will be better served.*

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College of Medicine State University of Iowa CLINICOPATHOLOGIC CONFERENCE

Feb. 17, 1947

INTRACEREBELLAR HEMORRHAGE:

A Complication in the Course of Cerebral Arteriosclerosis

Summary of Clinical Record

This 59 year old white housewife was referred to the Neurological Service on Nov. 20, 1946, by her family physician because of headaches, vomiting, urinary retention, mental confusion, and variable stupor.

The past history was chiefly of interest in that the patient was known to have had arterial hypertension for many years. Symptoms consisted of headaches, nervousness, cardiac distress, dizziness and fatigability. The family and social histories disclosed nothing unusual.

The present illness began approximately one and one-half years prior to admission at which time dysfunction of the right upper extremity in the nature of periodic weakness and loss of control was noted. Occasionally, the right leg gave way, causing the patient to stumble. During the same period, the patient's family had observed a slow and irregular progression of personality disturbances. These consisted chiefly of irritability, dullness, asthenia, and loss of ability to carry out temporal planning. Although there was an unquestionable tendency for the symptoms to be progressive, relatively lucid periods were frequently interlarded.

On Nov. 9, 1946, the patient experienced a severe right temporal headache. Dizziness and mental confusion reached proportions not previously observed and frequent vomiting occurred. The lower extremities could not be managed. The patient was admitted to a local hospital on

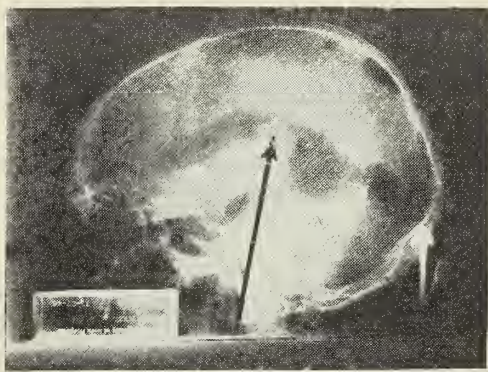


Fig. 1. Right lateral ventriculogram demonstrating (a) moderate dilatation of the left lateral ventricle and (b) a filling defect, slightly smaller than a golf ball, due to a lesion arising from the floor of the ventricle, just posterior to its midportion.

the evening of the same day. The cerebrospinal fluid is said to have been clear, although the red cell count was 825 per cu. mm. The pressure was considered normal, the sugar and total protein increased. The Wassermann reaction of the spinal fluid was negative and the gold curve normal. During the first few days the patient was unable to void and it became necessary to catheterize her regularly. On each occasion "quite a lot" of urine was obtained. She now complained of headaches in the right temporal and suboccipital regions. Mental confusion gradually receded after the fourth day, but vomiting continued sporadically. The right arm became somewhat weak and clumsy and "balance" was poor. The right finger-to-nose test was poorly executed.

On admission to the University Hospital, she appeared to be a plethoric, well developed woman of the stated age. The rectal temperature was

98.4 F., pulse rate 80 per minute, respirations 18 per minute, and blood pressure 185/100 mm. Hg. The patient was dull, at times apathetic and inaccessible, but generally fairly cooperative. A dysarthric speech defect was noted. Vomiting, unrelated to the ingestion of meals, was present. Incontinence of urine was observed. The general physical examination disclosed no unusual findings in the head or thorax. There was a well healed right lower rectus abdominal scar. Nuchal rigidity was well developed and a positive Kernig sign was demonstrable. The neurologic examination disclosed normal pupils and well coordinated extraocular movements. Visual acuity was preserved. The optic fundi disclosed no choking of the discs. There was nicking at the crossing of retinal veins and arteries, and the latter exhibited silver streaking. There was weakness of the face and upper extremity on the right. Deep reflexes were present and equal in all four extremities and the response to plantar stimulation was flexor in type bilaterally.

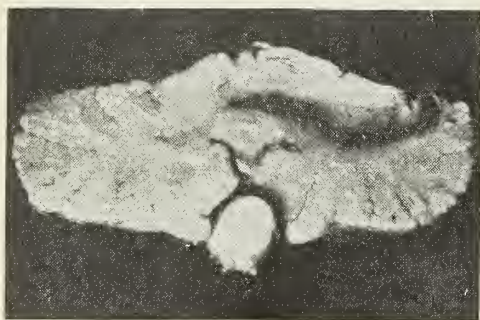


Fig. 2. Photograph of cross section of cerebellum and medulla, showing intracerebellar hemorrhage, right.

X-ray examinations of the chest and skull on November 21 disclosed no remarkable features. The cerebrospinal fluid was xanthochromic but clear and under a pressure of 90 mm. H_2O . Serologic tests of both the blood and cerebrospinal fluid were negative for evidence of syphilis. The total protein of cerebrospinal fluid was 56 mgm. per cent. The blood urea nitrogen measured 16 mgm. per cent and the creatinine 1.0 mgm. per cent. On November 23 the hemoglobin was 11 grams per 100 cc., the leukocytes numbered 6,000 per cu. mm., and the differential smear was considered normal.

During the ensuing days, vomiting reappeared sporadically although it gradually receded. The slurred speech persisted. The right grip became somewhat weaker. Orientation was good except in the time sphere. On November 26, the patient exhibited dullness and she was indisposed to move

the head owing to neck pain and nausea. In the posture-holding tests the fingers and arm of the right side displayed a slow downward drift. There was also a faulty rebound on the right. The right finger-to-nose test was dysmetric. A moderate degree of astereognosis was demonstrable in the right hand. There was now a definite dysarthric speech defect and the suggestion of a slight degree of dysphasia.

On November 28 the patient lost control of the right-sided limbs and became more stuporous. Speech was unintelligible and garbled and there was an apparent receptive aphasia. The optic fundi disclosed no evidence of papilledema.

On Nov. 29, 1946, under local anesthesia, ventriculography was carried out. The brain as inspected through the burr openings overlying the parietal cortex was considered to be under slight, if any, increased tension. Beaded, yellowish, atherosclerotic arteries were conspicuous in the scalp and on the exposed cortical surface. They bled very little on being severed. The cerebrospinal fluid obtained from the right lateral ventricle was clear and under no perceptible increase in pressure. Approximately 30 cc. were withdrawn in fractions and replaced by an equal quantity of air. The x-ray films disclosed a moderate, generalized ventricular dilatation of degree approximately twice normal. A very slight shift from left to right was considered to be present. The mid-body of the left lateral ventricle exhibited a filling defect in the form of an opaque globe, slightly smaller than a golf ball. The possibility that this might represent the glomus of the choroid plexus of the left lateral ventricle was entertained only to be rejected on the ground that it was located too far forward in the body.

Because of the slight shift of the ventricles and the filling defect, a left-sided bone flap was reflected, centered over the supramarginal gyrus. The brain was slightly full on first encounter, but on incising the pia-arachnoid, cerebrospinal fluid escaped and gave ample relaxation. The sulci were widened, the gyri narrowed and the cortex appreciably yellowish. The arteries were markedly atherosclerotic and on being severed oozed blood in a weak, steady stream rather than in characteristic rhythmic spurts. An incision was made through the mid-parietal silent area. The underlying brain appeared softer and more yellowish than normal. No tumor was encountered. Several specimens of gliotic brain were removed. The left lateral ventricle was entered and the globoid mass noted in the ventriculograms was demonstrated. This was well circumscribed, shaggy, cystic and of a size corresponding to that noted roentgenographically.

It stemmed from the choroid plexus, some 2.5 cm. anterior to the atrium. It was removed without incident.

The patient's postoperative course was one of further depression from which she did not arouse during the ensuing three weeks. During the first four postoperative days the temperature varied between 101 and 104 F. It became normal on the fifth day. The pulse rate ranged between 90 and 120 per minute, respirations varied between 20 and 36 per minute, and blood pressure ranged in the neighborhood of 125 to 200 mm. Hg. systolic and 50 to 134 mm. Hg. diastolic. The preoperative neurologic status characterized as previously noted remained unaltered. During the second week, some small gains were noted. Lumbar punctures yielded slightly blood tinged cerebrospinal fluid, gradually changing to a clear xanthochromic character, and under pressures ranging between 80 and 180 mm. H₂O. The vital signs reached near normal levels on December 7 and 8, and the patient at times opened her eyes and responded semipurposely. Early in the morning of Dec. 21, 1946, three weeks after operation, the patient's temperature suddenly rose to 106.8 F. and all responsiveness to nocuous stimulation disappeared. In spite of general supportive and antithermic measures the patient expired just before noon.

Discussion of Clinical Diagnosis

Dr. Adolph Sahs (Neurology): The differentiation of vascular from neoplastic diseases is difficult because of the frequency of both in the same age group. The following summary shows the features of this case which favor each diagnosis. The evidence for neoplasm was strong enough to indicate ventriculography.

Favoring vascular disease

Known arterial hypertension.
Memory loss and personality change.
Blood in spinal fluid.
Retinal sclerosis; no papilledema.
Spinal fluid pressure 90 mm. H₂O.

Favoring neoplastic disease

History of periodic loss of control of right upper and lower extremities.
Memory loss and personality change.
Severe headache and stiff neck.
Persistent vomiting.
Apparent progression of weakness of right arm plus increasing apathy.

Summary of Necropsy Findings

There was a recent operative wound in the left parietal region of the cranium. Beneath the dura

was a thin sheet of clotted blood which measured 4 mm. in maximum thickness. It covered the cortical surface of the occipital lobe and extended along the left leaf of the falx cerebri for a short distance. The clot was not organized. The operative tract through the cerebrum into the left lateral ventricle was lined by a thin zone of necrotic brain tissue. There was no blood in the ventricular system. The basilar artery was tortuous, thick walled, and atheromatous. The same changes were seen microscopically in the small arteries and arterioles throughout the brain. A large organizing hematoma occupied about half the right cerebellar hemisphere. This was entirely within the cerebellum and neither inspection nor palpation of the surface revealed the hematoma within. There was a thin wall of glial and connective tissue fibers around the hematoma with organization of the clot proceeding in the periphery. Many phagocytes in the wall of the hematoma and the surrounding cerebellum were filled with old blood pigment. Another area of old encephalomalacia was found in the midbrain. It was quite old and inactive. No other fresh infarcts or hemorrhages were found. The whole brain was edematous.

Incidental Findings: A severe necrotizing lobular pneumonia involved both lungs. The heart was slightly enlarged and heavy. It weighed 380 gm. (normal weight 280 gm.) and the fibers were large and hypertrophic. The liver and spleen were somewhat enlarged and congested and there was slight peripheral edema. About 200 cc. of clear yellow fluid was present in each pleural cavity. The gallbladder was slightly thickened and scarred and contained six faceted bile pigment stones. There was no obstruction to bile flow, however. The myometrium was deformed by two small intramural leiomyomata, one of which was calcified. The coronary and mesenteric, as well as the intracranial arteries were arteriosclerotic. There were many large atheromatous plaques in the aortic wall. Some of these were calcified.

Necropsy Diagnoses

Arteriosclerosis, generalized, severe.
Hemorrhage, intracerebellar, right hemisphere.
Pneumonia, necrotizing, lobular, severe, bilateral.
Encephalomalacia, old, arteriosclerotic, midbrain.
Encephalomalacia, postoperative, left parietal lobe.
Cardiac hypertrophy.
Visceral congestion.
Cystitis, chronic, mild.
Leiomyomata, calcified, uterus.
Decubitus ulcers, both hips.
Cholecystolithiasis.

Clinical Discussion

Dr. Russell Meyers (Neurosurgery): A matter of chief interest here is that of differential diagnosis. The correct diagnosis was missed in spite of the use of available clinical armaments. The diagnosis of intracerebellar hemorrhage is, as a matter of fact, extremely difficult to make, and I have never seen it made on clinical grounds alone. There were in the present case prominent "focal signs" (of right hemiparesis) attended by progressive mental deterioration. Later superimposed upon these were evidences of meningeal irritation. The cerebrospinal fluid was moderately bloody at first then cleared progressively. We inferred the existence of a lesion, probably apoplectic, deep in the left parietal lobe.

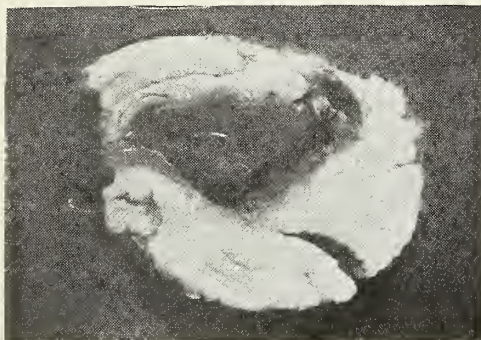


Fig. 3. Photograph of cross section of the right cerebellar hemisphere, showing organization in the wall of the hemorrhagic lesion.

During ventriculography, it was noted that the scalp and cerebral arteries were extremely sclerotic. This observation gave us a faulty attitudinal set and the latter was re-enforced by the observation that the brain did not bulge and that the intraventricular fluid was not under increased tension. The inference was thus drawn that the patient probably did not harbor a space-occupying lesion. Proceeding next to the ventriculograms, the two lateral and the third ventricles were found symmetrically dilated. Such dilatation is open to two general interpretations: (a) that it represents a hydrocephalus ascribable to some agent which interferes with the circulation of cerebrospinal fluid; and (b) that it is a hydrocephalus "ex vacuo," i.e., the consequence of a diffuse degeneration of brain substance of, for example, arteriosclerotic origin. The former is commonly attended by a bulging brain and increased tension of cerebrospinal fluid and the latter by a relaxed brain. Once again we were misled by cleaving to traditional interpretations. Finally, the ventriculo-

grams disclosed a mass slightly smaller than a golf ball within the left lateral ventricle and deep to the post-central gyrus. We rejected the interpretation that this was an enlarged glomus of the choroid plexus and remarked that whatever its nature, it could not be invoked to explain either the clinical or roentgenographic findings. Because of the patient's downhill course and her right hemiplegia, the left hemisphere and ventricle were explored. Only softened brain and a cystic elaboration of choroid plexus were disclosed.

I believe we can learn a lesson of wide importance from this case—that neurologic and vegetative signs and symptoms subtended by space-occupying lesions are seldom substantially explicable by appeal to the much iterated concept of increased intracranial pressure. This notion crept into clinical literature early in the present century. It arose from wholly valid animal experimentation in Kocher's laboratory. In adopting it for their own uses, clinicians overlooked the crucial point of the animal experiments: that to produce the four stages of medullary compression of the Kocher schema *the intracranial pressure must approach or exceed the diastolic blood pressure*. If the latter is taken as in the neighborhood of 80 mm. Hg., it will be realized at once that the Kocher schema will be applicable in human cases but rarely, for increased pressure of the magnitude encountered clinically is generally at 20-25, seldom 40-45, and extremely rarely at 60 mm. Hg. I have seen it at 80 but twice, and at 90 but once following overwhelming traumas.

Within the past decade, Browder and I have conducted several series of experiments on humans and dogs, leading by different approaches to the same conclusion, namely, that the use of the Kocher schema and the widely employed concept of increased intracranial pressure to account for clinical phenomena is in the vast majority of cases incompetent and bound to be misleading for diagnostic, prognostic and therapeutic purposes.

Dr. Emory D. Warner (Pathology): Would evacuation of the intracerebellar hematoma have prolonged this patient's life?

Dr. Meyers: A local vascular disturbance was doubtless produced by the lesion. Ischemia, in my opinion, is a much more frequent cause of neurologic aberrations than increased pressure. The latter, to produce any effect, must do so by the intermediation of ischemia, hypoxia and hypoglycemia. I incline to the belief that the removal of the intracerebellar clot would have helped the patient.

STATE DEPARTMENT OF HEALTH

Walter L. Downing

DIPHTHERIA INCREASE AMONG ADULTS

Diphtheria has in recent years become more prevalent among adults. This statement is based on records of reported cases of diphtheria and fatalities from this cause as notified to the State Department of Health.

In the following table, diphtheria reports in a series of 935 cases for the six year period 1940-1945 are distributed according to age groups.

DIPHTHERIA MORBIDITY IN IOWA 1940-1945 Age Distribution of 935 Reported Cases

Age	Number in Age Group	Percentage Distribution
0-1	9	1.0
1-4	128	13.7
5-9	205	22.0
10-14	145	15.5
15-19	106	11.3
20+	342	36.6
Totals.....	935	100.1

In a series of 935 diphtheria cases as reported by physicians through local and district health offices during this period, 1 per cent occurred in babies under one year and 36 per cent in children 1 to 9; the age group 10 to 19 was affected to the extent of 27 per cent, while 342 (36 per cent) or well over a third of the total number were persons aged 20 or above.

In a larger series of 983 reported cases, 89 of the patients resided in rural areas, 201 in cities under 2,500, and 693 or 70 per cent of the total, in cities of over 2,500.

During the three year period 1944-1946, the Department's Division of Vital Statistics recorded 41 deaths due to diphtheria. Distribution of these fatalities according to age is presented in the following table.

DIPHTHERIA DEATHS IN IOWA 1944-1946

Age Group	Number	Percentage Distribution
Under 1 year	2	4.9
1-4	12	29.2
5-9	10	24.4
10-19	9	22.0
20 or above.....	8	19.5
Totals.....	41	100.0

Of the total number, two fatalities (5 per cent) occurred among infants under one year, 33 (74 per cent) in persons between one and nineteen years, while eight, or nearly 20 per cent of the deaths were among adults of 20 years or older. During the past three years, four deaths from diphtheria resulted in persons over 50 years of age.

Among 38 diphtheria deaths in Iowa residents during the past three years, 27 or 71 per cent involved urban populations and cities of 2,500 and over. Seven fatalities occurred in Sioux City, three in Clarinda, two in Clinton, two in Davenport, two in Marshalltown, two in Webster City and one death in each of the following cities: Clear Lake, Council Bluffs, Eagle Grove, Emmetsburg, Fairfield, Mason City, Ottumwa, Maquoketa and Muscatine.

The above figures show the need for continued emphasis on the prevention of diphtheria through active immunization. The Schick test, very useful to determine susceptibility to diphtheria, is recommended: (1) for children and others who have previously received a series of treatments for active immunization; (2) for those of teen age; and (3) for adults of all ages.

Modern means of prevention, applied to susceptible adults as well as to children, are urgently needed to bring about further reduction in morbidity and mortality from diphtheria.

IOWA PUBLIC HEALTH ASSOCIATION IN ANNUAL MEETING

The 20th annual meeting of the Iowa Public Health Association will be held May 1-2, 1947, at Hotel Fort Des Moines, Des Moines.

Subjects will be presented which will be of special interest to physicians and local health officers. In a symposium on "Industrial Hygiene," medical and nursing activities pertinent to the health of workers will be considered. An experienced chemist will discuss the ways in which industrial hazards are revealed through chemistry. Another paper will deal with the present status

of control of air borne infection through ultra-violet radiation. "Hospital Construction and Extension of Facilities" and "Immunization and Community Health Services" are other subjects for presentation and informal discussion.

A cordial invitation is extended to physicians to attend any or all of the sessions.

REPORTED OCCURRENCE OF INFLUENZA

On Saturday, March 1, a report reached the State Department of Health through the State Hygienic Laboratory and the University Department of Health that some of the students at Iowa City were ill with influenza-like symptoms lasting four or five days and characterized by fever, chills or chilliness, suborbital pain, backache, sore throat and a moderate degree of prostration. Blood counts showed a leukopenia.

The Health Officer's Weekly Statement, issued by the U. S. Public Health Service for the week ending March 1 lists the following states as reporting a marked increase in prevalence of influenza, compared with the same week of 1946: Indiana, 137 cases; Missouri, 90; Kansas, 325; Virginia, 491; Georgia, 454; Arkansas, 376; Texas, 3,636 and Colorado, 1,212.

To learn whether cases of upper respiratory infection in this area might be caused by influenza, telegrams were forwarded on March 13 to Thomas Parran, M.D., Surgeon-General, U. S. Public Health Service, and to Thomas Francis, M.D., Department of Epidemiology, University of Michigan, regarding isolation of influenza A or influenza B types of virus in connection with the current outbreak.

On March 14 the Public Health Service reported that influenza A virus has been recovered

in Georgia, and from Michigan a telegram stated that the same type of virus (influenza A) had been demonstrated recently in the central section of the United States.

Throat washings and serum specimens of patients are being tested in the Department of Bacteriology at the University of Iowa. Several weeks are required to allow convalescent serum to develop antibodies against the several types of influenza virus.

In a recent number of the *Journal-Lancet*, Salk states: "Since the virus of influenza A was not discovered until 1933 and the virus of influenza B until 1940, the etiology of only the more recent epidemics has been established with certainty. One can merely speculate that the viruses known today were related to the 1918 episode. The variation in severity of epidemics of known etiology suggests that the difference between the 1918 epidemic and those that have followed may have been due, in part at least, to variations in the virus. Although the viruses have been found as the cause of sporadic cases and of localized outbreaks at all seasons, epidemics of influenza A seem to have recurred at intervals of two to three years and during the winter months; the cycle for influenza B appears to be four to six years. The distinction between the two viruses is based upon antigenic characteristics. This means that the Type A virus produces antibodies only to itself and not to Type B, and vice versa. Moreover, immunity to the A type does not confer immunity to the B type, and vice versa."

Physicians and local health officers are requested to report the approximate number of cases of influenza known to occur, so that the department's weekly Morbidity Report may reflect quite accurately the actual incidence of this disease.

MORBIDITY REPORT

Disease	Feb. '47	Jan. '47	Feb. '46	Most Cases Reported From
Diphtheria	9	5	17	Clinton, Scattered
Scarlet Fever	209	129	237	Clinton, Polk, Wapello
Typhoid Fever	2	1	0	Appanoose, Greene
Smallpox	0	0	2	.....
Measles	72	49	146	Des Moines, Ida, Polk
Whooping Cough	101	36	27	Benton, Boone, Clinton
Brucellosis	55	45	0	Benton, Scattered
Chickenpox	345	435	110	Black Hawk, Dubuque, Scott
German Measles	2	10	37	Dubuque
Influenza	0	1	0	.....
Malaria	6	3	41	Polk, Scott, Winnebago
Meningitis Meningococcus	11	10	17	Clinton, Van Buren, Wapello
Mumps	75	70	123	Black Hawk, Clinton, Delaware
Pneumonia	20	19	23	Black Hawk, Boone, Marion
Polomyelitis	2	6	1	Clinton, Marion
Tuberculosis	43	57	53	For the State
Gonorrhea	147	153	183	For the State
Syphilis	113	134	152	For the State

The JOURNAL of the Iowa State Medical Society

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College of Medicine Annual Issue

The scientific portion of this issue of the JOURNAL has again been contributed by members of the faculty of the College of Medicine of the State University of Iowa, Iowa City. We are happy to note that the various subjects covered in this edition maintain the standard of excellence of previous years.

At the Centennial Dinner held in Iowa City in February to commemorate the founding of the State University, it was emphasized that opportunity for freedom of thought still prevails in that institution. The physicians of Iowa may still look with pride upon their College of Medicine because of its enviable position among medical colleges. We are well aware of the existing demands upon the medical school due to the enormously increased number of applications for admission and the complications caused by the operation of the accelerated training program. In spite of the demands, the members of the faculty have not neglected their usual quota of scientific papers.

Dean E. M. MacEwen; the members of the faculty committee, Dr. L. E. January, Dr. J. S. Gottlieb, Dr. R. A. Dorner, and Dr. E. W. Scheldrup; and the authors of the papers are again to be congratulated on their contributions for this number of the JOURNAL.

Come to the State Meeting

The readers of the JOURNAL are hereby tendered a personal invitation in behalf of the office

of the Iowa State Medical Society to attend the annual session which will again be held in Des Moines April 16, 17, and 18. The headquarters will, as usual, be located in Hotel Fort Des Moines. The program for this session was presented in the March issue of the JOURNAL.

As has been the custom in previous years, the Iowa State Medical Golf Association will hold a tournament at the Golf and Country Club on April 15.

On April 16 all members of the Iowa State Medical Society are cordially invited to attend a preconvention clinic at 9 a. m. at Broadlawns Polk County Hospital, Eighteenth and Hickman Road, Des Moines. Following this clinic, luncheon will be served at 12:30 p. m. at the hospital.

The guest speakers for the convention compose an outstanding group, including Dr. George F. Lull, Secretary of the American Medical Association. The Eye, Ear, Nose and Throat Section, the Fracture Committee, the Pediatricians, the Iowa Anesthesiological Society, the State Society of Iowa Medical Women and the American Medical Women's Association, and the Woman's Auxiliary will hold special meetings as is customary. A hobby show will be presented again this year. The scientific exhibit promises to be even larger than usual. Your attention is again invited to the efforts of these exhibitors in your behalf, and your support through attending the various exhibits will prove stimulating to both yourself and the exhibitor.

Due to the anticipated attendance, it is suggested that hotel reservations be sent in early. We shall hope to welcome you in Des Moines; your presence is essential in order that the annual meeting may prove a success for the Society as a whole.

The Role of the General Practitioner

There has recently been a decided renewal of interest and activity of, by and for the general practitioner. As the various qualifying boards in the medical specialties have flourished, the general practitioner has come to feel that his field of practice was assuming less and less importance.

The general practitioner believes he has some very definite complaints against the status quo and against the overweening influence of the specialist, such as: (1) while he outnumbers the specialists four to one throughout the country, he has not had adequate representation in the government of medical societies and medical affairs generally; (2) there has been a decided lack of opportunity extended for postgraduate study in comparison to that afforded specialists; (3) that the public is

inclined to look upon him as an inferior type of doctor; and (4) that the general hospital does not recognize the general practitioner as such in its staff organization. Whether these complaints are well founded in all instances is not readily determined, but the general practitioner is inclined to blame the unusual increase in the number of certified specialists as the cause of the apparent cleavage between these two fields of medical practice.

General practice will always hold the key position in serving the best interests of medicine as a whole, and hence, of the public welfare.

To be a successful general practitioner implies a comprehensive knowledge of the diagnosis and treatment of acute and chronic disease conditions, of uncomplicated obstetric procedures, and the ability to carry out proper treatment for minor, acute or emergency surgical conditions. The general practitioner thus becomes the highest type of family physician or medical advisor whose judgment will determine when more specialized skill and experience are required for both diagnosis and treatment.

To properly evaluate and accord proper recognition to the general practitioner, particularly in relation to the specialist, is one of the most difficult problems facing the medical profession at this time.

Whether the solution will come through a special form of qualifying examination is doubtful. The Indiana State Medical Society has sponsored the formation of the Indiana Board of General Practice of Medicine, which is now operating by requiring written and oral examinations for certification as a Diplomate of the Indiana Board of General Practice. If this plan should be followed by the remaining forty-seven state societies, there is reason to fear that this effort to sift the "sheep from the goats" may lead to a still wider cleavage in the medical profession.

There is a strong consensus that the comprehensive written and practical tests provided by the National Board of Medical Examiners might well serve as a pattern for qualification in general practice and reciprocal recognition in any plan for qualifying general practitioners.

For the immediate solution, the following is considered: (1) lengthening the rotating hospital internship to two years; (2) establishing rotating residencies of two or three years in general practice as recently inaugurated by the University of Colorado Medical School; and (3) the addition of a service on general practice in the larger hospitals.

The establishment of a Section on General Practice in the American Medical Association would appear to be a step in the right direction.

For the general practitioner in active practice the provision of extension courses or institutes, established on a national basis sponsored by the American Medical Association in cooperation with the various special societies, and some form of certification of the same will go far toward improving the tone of general practice and enhancing the service and dignity of the general practitioner.

April Is Annual Cancer Month

The recurrence of Cancer Month suggests a review of the cancer situation in Iowa. From figures furnished by the Division of Cancer Control of the State Department of Health, it is shown that Iowa ranks twenty-second among the states having the highest crude death rate from cancer. The cancer death rate for the United States was 129.1, whereas the rate per 100,000 in Iowa, is 157.9.

Five diseases, namely, diseases of the heart, cancer, intracranial circulatory lesions, nephritis, and pneumonia, accounted for more than two-thirds of all the deaths in Iowa. Cancer was the cause in 14.29 per cent of all deaths in the State.

In 1945, the last year for which complete figures are at this time available, there were 3,698 deaths of Iowa residents, 1,785 of males and 1,913 of females. From age 35 to 70, female deaths predominate; at that age, male deaths take the lead. The peak is reached at age 75, when there were 584 deaths of males and 519 of females.

The commonest site in both sexes is the digestive tract, cancer of which caused 48.8 per cent of all cancer deaths. This was a rate of 68.1 as compared to the national rate of 58.8. Next in order of frequency is the genital tract, which accounted for 11.5 per cent of deaths in both sexes, but in this site exclusive of the uterus and breast, men are afflicted in a ratio of almost four to one. There were 320 deaths from cancer of the uterus and 392 from cancer of the breast, two of the latter occurring in males.

Cancer of the respiratory organs is everywhere increasing. In Iowa there were 200 deaths from cancer in this site, 146 in males and 54 in females. Cancer of the buccal cavity is more frequent in males and was the affected site in 77 male deaths as compared to 21 in females. The same holds true of cancer of the skin in which there were 49 male and 26 female deaths.

Almost three-fourths of the cancers fatal in 1945 were, if we include the breast, in either the digestive or genital tract. In men more than one-half of all cancers are in the digestive tract and almost one-fifth in the genital organs.

Iowa enjoys exceptional medical and hospital

facilities for the diagnosis and therapy of cancer. At least eight tumor clinics now offer group consultation in the diagnosis of suspected lesions and treatment recommendations. Amazing advances have been made in the technic of resection of the stomach and in the treatment of genital cancer, but, unfortunately, patients come for treatment too late.

Pack and his colleagues have shown that in the gastric patients coming to Memorial Hospital, the average time elapsing between the occurrence of first symptoms and their arrival for surgery is twelve and one-half months. During eight of these months, the patient has done little or nothing; for four and one-half months he has had medical care of a sort, for either a diagnosis has not been made or, having been made, adequate treatment has not been instituted.

This lag can only be reduced by widespread motivating education of the public, and this preferably by a professional and authoritative source. Unless patients voluntarily seek competent advice in time, the best medical facilities are of no avail. The division is carrying on an educational program, but individual and personal instruction by the doctor among his patients is equally important and far more impelling than mass education can ever hope to be. The National Research Council is organizing fields of research in cellular biology, cytochemistry, radiology, physics, enzymes, hormones, genetics, and viruses.

The Iowa Cancer Society, during this month, is seeking to raise funds to forward such an educational program. A total of \$12,000,000 is sought of which Iowa's share is roughly \$250,000. Sixty per cent of the money collected remains in the state and is expended for activities directed and controlled by a Board, which has a large representation of the State Medical Society's Cancer Committee. Cancer control is a project which deserves our moral and financial support, one that should appeal particularly to the physician and which imposes upon him an obligation of careful study of the subject, no matter what his specialty or sphere of practice.

Further Advances in Tuberculosis Control

Tuberculosis mortality has changed markedly in the last thirty years. Currently, we find the greatest mortality occurring in people past 30 years of age. We also know that the number of people infected has materially decreased. At the younger ages, infected individuals are the exception rather than the rule. Mass examinations during the past twenty years were conducted chiefly among the young age group. The discov-

ery of active cases in this group, along with the infected individuals, gave a starting point for case finding. This work has undoubtedly been valuable in cutting down the mortality in the younger age group and also in decreasing the number of infected individuals. It is easy to imagine why tuberculosis can be so easily spread between ages 12 to 25, the period in which young people are actively investigating those of the opposite sex.

In the fourteenth annual report of the Tuberculosis Committee of the American Student Health Association for the academic year 1943-44, statistical data was furnished on the testing and examination of college students. Some 286 colleges and universities were involved in which were enrolled approximately 407,000 students. The technic of testing varied somewhat in the different institutions and the number of positive reactors also varied. The larger percentage of positive reactors was found in the institutions using the two dose method. A higher percentage of positive reactors was found among males, regardless of the method used in testing. The incidence of tuberculous infection among college students tested during this two year period varied between 15 and 30 per cent.

These figures indicate the advantages of the educational program which has been waged. It is not uncommon for teen-age children to bring older members of their family to the physician for examination regarding the presence of active tuberculosis. In communities where previous efforts in case finding have been rebuffed, these young people have been so well educated in health problems that they question the fact that a dry hacking cough in one of the grandparents is merely a bronchitis.

There remain two very important points relative to the epidemiology of tuberculosis that are open to question and about which there are two schools of thought. The first of these is the question of how the individual develops reinfection type of tuberculosis. The second point relates to the degree of immunity which exists following primary infection. The consensus seemed to be that primary infection did not confer any noticeable degree of immunity. Now this question is being revived. Myers reported that in studies of student nurses in Minneapolis, no significant difference in the development of the chronic reinfection type of tuberculosis was found among those entering as reactors and those who became reactors while in school.

Physicians as a whole are familiar with the experimental work which has been done with Cal-

(Continued on page 180)

NEWS NOTES

from the

Committee on Medical Service and Public Relations

AID TO THE BLIND PROGRAM

Doctors in Iowa may well be interested in the program of the State Commission for the Blind. This commission is concerned not only with blind persons but also with those who are visually handicapped. Through a home teacher, the commission provides training in the afflicted person's own home; its school for the blind at Vinton conducts a six weeks' training course for them each summer. The object, of course, is to enable a person to live a fuller, more useful life at home and to train him for gainful employment whenever possible.

A new departure will be offered by the school for the blind this summer. It will offer a week of training on the campus for mothers with visually handicapped children under five years of age. During the week the program will endeavor to provide a preschool training program for the children by which the mothers will become acquainted with the type of training that would be beneficial to the child and to help them solve present problems. There has seemed to be a need for a service for mothers of visually handicapped children; many of them need more information on how to work with and for the child to the best advantage. The summer training school should provide an opportunity for the exchange of ideas and experience and prove a help to all participating.

A matron will be on duty to look after the needs of the children at certain times so that the mothers may have an opportunity to attend meetings and visit together. There will be no registration fee for the course, and board and room will be provided by the school for both mothers and children.

For more information about the preschool training course, letters may be addressed to Mr. Leslie M. Hays, Superintendent, School for the Blind, Vinton.

Mary L. McCord, Executive Secretary

ADDITIONS TO VETERANS PROGRAM

Sixty supplemental procedures have been authorized by the Veterans Administration, thus increasing the scope of the work. Information regarding them will be mailed to all physicians soon.

BLUE CROSS PLANS APPROVED

Both Blue Cross Plans of Iowa have been reapproved according to an announcement received from Richard M. Jones, acting director of the Blue Cross Commission. Fredric P. G. Lattner is executive director of the Hospital Service, Inc., of Iowa, with headquarters in Des Moines, which is the Blue Cross Plan which services 73 counties in Iowa and Rock Island County, Ill. O. L. Smith is executive secretary of the Associated Hospitals Service, Inc., of Sioux City, which is the Blue Cross Plan which covers twenty-six counties in the northwestern part of Iowa and the state of South Dakota. The American Hospital Association Approval Program for Blue Cross Plans has been a significant factor in the development and extension of Blue Cross service to the American people, as indicated by the rapid development of Blue Cross service since the program was inaugurated. Early in 1933 the American Hospital Association established a list of essentials or principles which should characterize the hospital service plans. Those essentials were:

- a. Emphasis on public welfare.
- b. Limitation to hospital service.
- c. Enlistment of professional and public interests.
- d. Free choice of physician and hospital.
- e. Nonprofit organization.
- f. Economic soundness.
- g. Dignified promotion and administration.

In September, 1937, the American Hospital Association authorized the Blue Cross Commission to make recommendations for formal approval of plans based on the above principles. Four years later approved Blue Cross Plans became eligible for active institutional membership in the American Hospital Association.

Annual reapproval is a requisite for institutional membership in the American Hospital Association and for continued use of the seal of the Association. Hospital Service, Inc., of Iowa has been approved each year since 1940, and Associated Hospitals Service, Inc., has been approved each year since 1941.

Present members of the Blue Cross Commission are M. Haskins Coleman, Jr., chairman; R. F. Cahalane, vice chairman; Abraham Oseroff, treasurer; Lewis E. Jarrett, M.D.; F. P. G. Lattner; Basil C. MacLean, M.D.; Joseph G. Norby; Rt. Rev. Msgr. R. Marcellus Wagner; and F. A. Wardenburg.

VETERANS ADMINISTRATION

Veterans Administration Home Town Medical and Dental Care Including Hospitalization in Contract and Private Hospitals

1. At the present writing there is in effect a contract with the Iowa State Medical Society whereby out-patient treatment may be supplied by home town participating physicians for service-connected disabilities. The physician must request prior authorization in each case, but in an emergency he may proceed with treatment provided a request for this authority is made not later than fifteen days after treatment is begun.

Prescriptions for veterans receiving out-patient treatment must be sent to pharmacists who participate in the Veterans Administration-Iowa Pharmaceutical Contract, inasmuch as the Veterans Administration cannot authorize participating physicians to dispense their own drugs. A list of all participating pharmacists has been supplied to all doctors concerned throughout Iowa.

All out-patient treatment requests must be made to the Chief Medical Officer, Medical Division, Veterans Administration Regional Office, Des Moines. The authorization will be forwarded through the Iowa Medical Service (the business office of the Iowa State Medical Society), and can be given only within a calendar month. Upon completion of an authorized service, the physician should submit his bill to the Iowa Medical Service for payment.

2. Prior authorization must be requested for all private or contract hospitalization, and cannot be granted if the request reaches the Veterans Administration Medical Division, Des Moines, subsequent to seventy-two hours after the onset of hospitalization. Under Veterans Administration regulations, only service-connected male veterans and both service-connected and nonservice-connected female veterans are eligible, provided that Veterans Administration Hospital facilities are not available or that travel to a Veterans Administration Hospital is precluded *and that an emergency exists*. The medical service rendered by the physician to a hospitalized veteran is also subject to the seventy-two hour restriction noted above.

In the event that medical service is given to a veteran without prior authorization or beyond that authorized, a claim form VA-583 may be submitted to the Des Moines Regional Office. This

will be forwarded to the Veterans Administration Branch Office for further processing, and in some instances the claim will be allowed if service connection has been established. Much doubt and delay in payment for medical service can be avoided if all physicians request authorization prior to treatment of a veteran, as eligibility can be accurately determined only from the veteran's case file which is kept in the Veterans Administration Regional Office. The veteran's eligibility status in some instances is subject to change.

The veteran population of Iowa is estimated at 320,000. Many requests for medical service reach the office of the Chief Medical Officer each day. At the present time the Medical Division is understaffed; nevertheless, it is able to render prompt medical service to eligible veterans. This is made possible only by the patriotism and civic-mindedness of Iowa physicians who signified their willingness to participate in the Iowa Medical Society-Veterans Administration Contract.

3. The dental program still has a sizable backlog. A large number of applications for this care have been received because under existing Regulations a dental examination must be procured within one year of discharge in order to establish service connection. The Veterans Administration has an agreement with the Iowa Dental Society whereby participating members render the authorized dental care to veterans in Iowa.

4. Veterans Administration Rules and Regulations are subject to change as new federal laws are enacted. The services rendered by the Veterans Administration are contingent upon this legislation.

5. The Medical Division provides an out-patient service which will soon be located in the Valley Bank Building in Des Moines. An out-patient service will also be established in the Cedar Rapids and Sioux City subregional offices. Additional full-time or part-time physicians are needed to staff these clinics. At the present time a roentgenologist, an otolaryngologist, a cardiologist, a chest specialist, and additional general practitioners are urgently needed in the Des Moines Out-Patient Clinic. These appointments are in the newly-created Department of Medicine and Surgery. Applications are processed by a Medical Board in the Veterans Administration Branch

(Continued on page 180)

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. WALTER L. BIERRING, Des Moines, Chairman

DR., HENRY G. LANGWORTHY, Dubuque, *Secretary*

DR. CLYDE A. HENRY, Farson

DR. CHARLES L. JONES, Gilmore City

DR. LESTER C. KERN, Waverly

Two Historic Cornerstones

WALTER L. BIERRING, M.D., Des Moines

In the entrance hall of the General Laboratory Building, west side University Medical Center, Iowa City, two old cornerstones of historic interest in the life of the University and its College of Medicine appear in the wall on either side of the doorway.

On the right side is placed a stone marked "Mechanics Academy, Founded June 14th, A.D., 1842." This Academy was a light colored, two story brick building located on the east side of Linn Street near Iowa Avenue and the first building in Iowa in which higher education was taught. While the State University of Iowa was legally established at Iowa City Feb. 25, 1847, it was not opened for several years. "In February, 1854, in spite of their many difficulties, the trustees resolved to put the university into operation. A Committee was appointed to recommend specific plans. In May it was reported that arrangements had been made to rent the Mechanics Academy of Iowa City for the accommodation of the faculty and students and a lease was secured for the period from November, 1854, to May, 1855."*

When the first University Hospital was constructed in 1898-99 on Iowa Avenue east of Linn Street, it displaced the old Mechanics Academy, but its cornerstone was removed and used for the same purpose in the building of the University Hospital. With the removal of all medical laboratories and hospitals to the new medical center on the west side of the Iowa river in 1927-28, this old cornerstone started on its final journey, and through the cooperation of Dr. John T. McClintock was placed in its present site in the General Medical Laboratory building.

The cornerstone placed to the north of the entrance, marked "J. C. Cochrane, Architect," is of equally historic significance. It formed the beginning of the first building erected in Iowa for the purpose of medical teaching. The building was opened in 1882, and until its complete

destruction by fire in 1901, all laboratory and didactic instruction of the medical department of the State University was carried on in this building.

Buildings, like men, form a part of history, and this old medical building had an important role in the development of the University Medical School. The evolutionary changes in medical education developed within its walls constitute some of the interesting traditions in Iowa medical history.

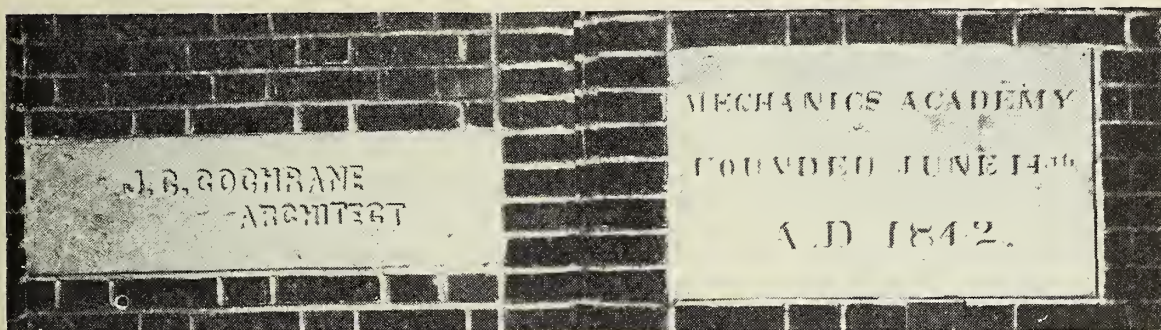
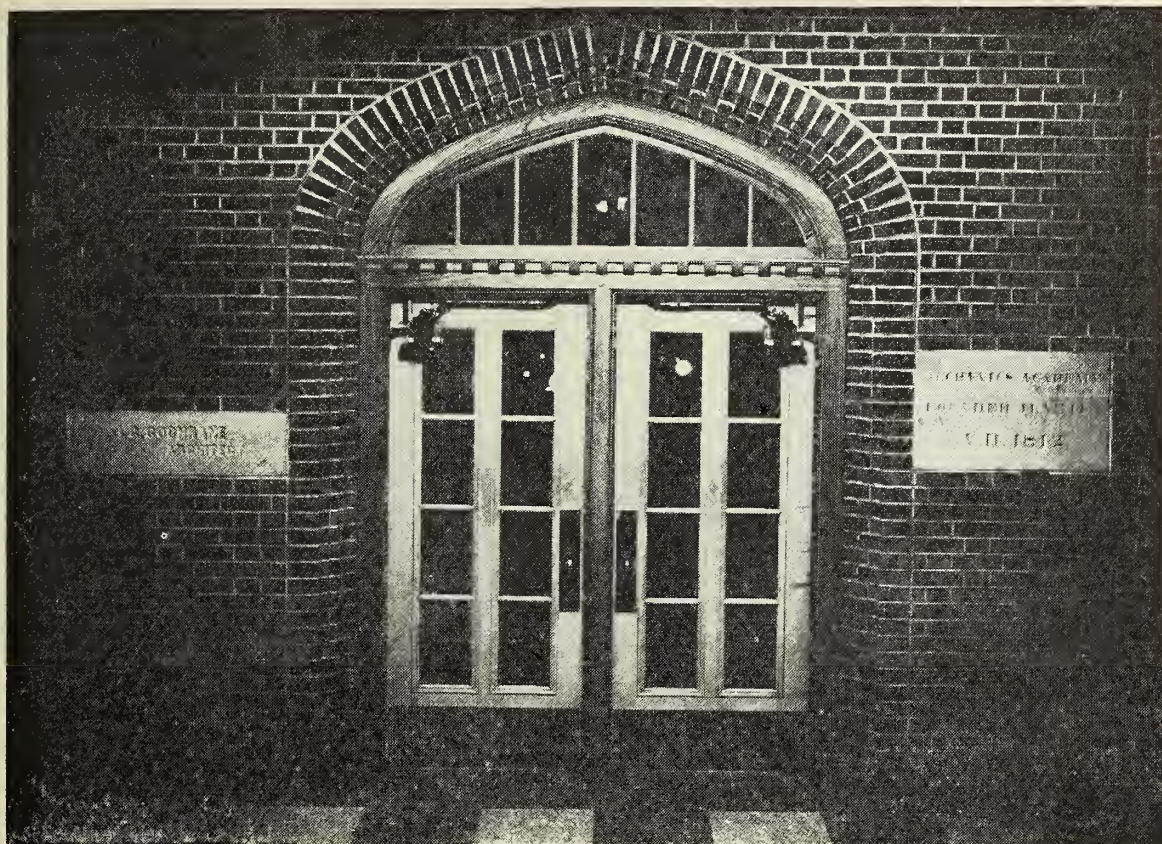
In it the modern laboratories in biochemistry, physiology, pathology and bacteriology had their beginning. The members of the original faculty of 1870 all taught in this building. Here was heard the brilliant Peck, the beloved and cultured Middleton, that finely tempered gentleman Farnsworth, the jovial Robertson, the rugged and earnest Shrader, the learned Hobby, the real scientist Hinrichs, and the handsome Clapp with his Chesterfieldian ways who knew how to make anatomy interesting yet was the keenest quiz master of them all.

A new generation of teachers had its beginning in this building. These halls heard for the first time that beautiful lecture on sleep, by Guthrie, the physiologist. When announced in later years, the room was filled to its fullest capacity. Here too the version by Chase (pharmacology) of the "Old Oaken Bucket" was first delivered and found its place in the medical archives. Harriman did his best work here in practical anatomy. Littig brought the flavor of the masters of Europe and instilled a new spirit of scientific medicine into the students and future teachers. Here Rockwood had his opportunity to establish the first laboratory of physiologic chemistry in the Middle West. The departments of histology, embryology, pathology and bacteriology also had their beginning in this building.

The first graduate courses in bacteriology, the "Pasteur Courses," were inaugurated in 1895. Here also the popular medical writer, Woods

*The Palimpsest, February, 1947.

Cornerstones



Hutchinson, served five years as professor of anatomy; with his choice expressions and fluency of language, he made the study very attractive.

In this building Whiteis, Dean, Bierring, McClintock and Albert also began their teaching careers.

There would be something lacking about this story if it did not mention that unique character, Billy Green, the janitor and jack of all trades in the the medical building. He assisted in practical anatomy, experimental physiology, preparation and care of museum specimens, and in leisure moments helped about the surgical clinic. Billy with his

ice pick at the entrance to the cooler formed a picture long to be remembered.*

Early Sunday morning, March 10, 1901, the building and contents were completely destroyed by fire. It made a striking white blaze, due no doubt to the large amount of alcohol just previously placed in the building to renew museum jars. As faculty members, students and friends watched its quick destruction, there was deep regret over the material loss, the unusually fine specimens of

(Continued on page 180)

*Bierring, Walter L.: Reveries of a Doctor: The Old Medical Building. The Iowa Alumnus, February, 1919.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. MARION H. BRINKER, Jefferson

President-elect—MRS. FRED MOORE, Des Moines

Secretary—MRS. CHARLES A. NICOLL, Panora

Treasurer—MRS. HENRY G. DECKER, 2908 Woodland, Des Moines

MARKED PROGRESS

A steady pace marks the progress in the development of voluntary prepayment medical care plans.

More than five million persons are covered.

Almost 100 per cent enrollment growth occurred in 1946.

Eighty-four plans have been organized to date.

All forty-eight states either have plans or are working on prepayment programs.

The voluntary prepayment medical care program is well under way. The stage is set for a growth in 1947.—Feb. 24, 1947, "News Letter of Council on Medical Service."

NATIONAL HEALTH ACT

Senate File 545, The National Health Act of 1947, was introduced to the 80th Congress February 10 by Mr. Taft for himself, Mr. Smith, Mr. Ball and Mr. Donnell. The bill is in the Committee on Labor and Public Welfare.

Under the bill all health activities of the Federal Government, except those of the Armed Forces and the Veterans Administration, are to be centralized under one agency. Among the purposes of the proposed legislation is an expansion of the Public Health Service, the promotion and encouragement of medical and dental research in the National Institute of Health and through grants-in-aid to states and the construction in the institute of a dental research department.

Several units of the agency are designated. The director of the office of Medical and Hospital Care Services must be a doctor of medicine who has had at least five years of active medical practice and is outstanding in the field of medicine.—Bulletin, Polk County Medical Society, February, 1947.

CANCER RESEARCH

Even the most pessimistic scientist cannot possibly read of the progress made in cancer research during the last thirty years without thrilling at the accomplishments and the spirit of success that fairly permeate this field. Solution of one problem discloses others and provides new methods, approaches and techniques for developing facts about cancer. Surely we are on the road to a successful solution of the cancer problem.

One carefully organized study of cancer includes nineteen different panels. These have such scientific titles as laboratory genetics, human genetics and mutations, dealing with heredity; cellular biology, which studies the life of the cell; milk factor, virus, botany, cytochemistry, nutrition, enzymes, proteins, synthesis and metabolism of steroids, concerning the living and chemical factors; endocrine experimental physiology, clinical investigations in endocrinology, dealing with the glands; clinical physiology of the blood and blood-forming organs; clinical physiology of the female reproductive tract, physics, radiology and isotopes.

Until recently cancer research could be divided into three main lines of procedure: transplantation, genetic factors and substances called carcinogenic agents capable of causing cancer. The work in the field of transplantation proved simply that the malignant cells follow the general biologic laws governing normal tissue grafting; most of this work is mainly academic. Recently it has been found that heterotransplantation can be accomplished when the chamber of the eye is used as a medium. Now human cancers can be transplanted into the anterior chambers of rabbits or guinea pig eyes and these malignant cells will continue to live and, in some instances, multiply. This new tool for cancer research may prove useful, particularly in connection with the theory of virus causes of human cancer.

Approximately three hundred physical, chemical and infectious agents have been found to be cancerous. Many authorities admit that there is an ever increasing variety of agents that will initiate cancer growth. However, they refer to Ewing's casual genesis and formal genesis of cancer. The first has to do with the wide variety of substances that will produce cancer and the second to the factors within the cancer cell that are responsible for the nature of the cancer cell and its unlimited growth capacity. The most important progress in the future appears to lie in a thorough understanding of the formal genesis of cancer.

Listed among the cancerous agents are aniline dyes, petroleum products, illuminating gas, coke, mineral and lubricating oils, textile products, radium bearing ores, cobalt and arsenic, chromates, nickel, carbonyl, asbestos, mesotherapy, anthracene oil, aromatic amino compounds, benzol, ultraviolet rays, roentgen rays and others. These products are

found in industries and necessitate protection of those exposed to the products. It may be significant that some of these substances do not stimulate but inhibit growth. Thus, in a site of chronic inflammation the healing process may actually be inhibited by a cancer producing agent; that leads to the theory of mutation since it is under these circumstances that cell life tends to mutate. Cancers are influenced by age, sex, diet, physical condition, purity of chemical, physical state of the compound, nature of the solvent, and the route or site of application. In no other human disease is there such a multiplicity of inciting agents. Methylcholanthrene, a fraction of tar, can be derived from bile salts and has a similar chemical structure to sex hormones and vitamin D. A certain infection will routinely produce carcinoma of the stomach in rats. Schistosomiasis, a tropical disease, has been associated with carcinoma of the bladder in human beings.

It is believed an inherited tendency or predisposition is not a general character but is confined, in strains of animals, to a definite organ or tissue type. Supposition is that the same is true in human beings. Strains of animals have been developed that regularly have cancers of certain organs. Several types of malignancy have been found in identical twins at about the same time in the same organ or site with the same histologic characteristics. In lower animals the inherited trait apparently has different degrees of predisposition. The inherited trait may be a disturbance in the endocrine system, alterations in immunity, anatomical or physiological processes that are predisposed to malignancy. For instance, in lung tumors an accentuation by a carcinogen will not only increase the rapidity of onset of malignancy but will increase the numbers of sites of origin. A most recent development by Strong is an alteration of the hereditary trait of mice by the use of a carcinogen and breeding, and in four generations all descendants developed cancer of the stomach in a species in which cancer of the stomach was rare. This implies that the carcinogen affected the genes of the ova to produce a hereditary trait. Carcinogens readily induce cancers in species with predispositions and rarely in certain species, such as pigeons and guinea pigs. Therefore, the response to a cancer inciting agent is determined by factors inherent in the strain or species.

Much work has been done in an effort to develop cancers with various hormones. The pituitary, thyroid, and adrenal hormones have been inactive to date. However, certain sex hormones appear to be carcinogenic. Estrogens applied over long periods have produced mammary, uterine, pituitary, testicular, lymphoid and bone malignancies in mice and other animals. In strains with a hereditary tendency, the estrogen may be a remarkably hastening or deciding influence toward malignancy development. Castration of a certain strain of mice had led to the development of carcinoma of the adrenals in 100 per cent of the affected animals. The practical discovery of Huggins that carcinoma of the

prostate stimulates the production of male hormones, and the benefit of castration in a percentage of these patients, is a welcome illustration of the practical benefits of cancer research.

There is no doubt that viruses produce malignancies. Examples are the Shope papilloma of rabbits, Bittner virus of breast carcinoma of mice, oral papilloma of dogs, Rous sarcoma of chickens, and Lucke's work with the kidneys of leopard frogs. Green feels that virus invasion may be at the basis of human cancers. His development of an antiserum that kills not only the virus but also cancer cells in mamillary cancer of the mouse makes one wish that his theory was true. Other authorities feel that there is probably no closer relationship between the virus and the cancer growth than there is between chemical carcinogenic agents and the malignancy they produce. Once the malignancy has started it has no further concern with the carcinogen.

It is generally conceded that the cancer trait is a universal cell that varies with each cell type and is dependent on hereditary factors. Attention is focused more and more on the intimate nature of cancer cells as compared with normal cells. Theoretical and meaningless phrases of explanation are being replaced by measurable and analytical differences between normal and malignant cells. For instance, on the questions of "why is the cancer cell invasive" Coman has demonstrated a significant decrease in the cohesiveness of cancer cells. Much work has been accomplished in measuring the activities of cancer cells. For instance, in carcinoma of the liver, many of the chemicals comprising the organ are decreased from the normal.

By revolutionary new methods, the cell substances can be separated in pure form. This may be the lead toward learning more about cell function and control. One cannot perform postmortem examinations without realizing that some organs, for an unexplainable reason, have a powerful immunity against malignant invasion in one patient while in another the same organ may be the most severely involved by the same type of malignancy.

There are at least five philanthropic foundations exclusively dedicated to cancer research. They include the Anna Fuller Fund, Finney-Howell Research Foundation, Inc., International Cancer Research Foundation, Jane Coffin Childs Memorial Fund for Medical Research and Sloane-Kettering Institute for Cancer Research. In 1937 there was an enactment of Congress creating the National Cancer Institute of the United States Public Health Service, along with the National Advisory Cancer Council. These were created for several purposes, including original cancer research and the donation of funds to deserving cancer projects in other institutions. One wonders about the responsibility of the Veterans Administration in the next twenty or twenty-five years when there will be a necessity of from four to five thousand beds to care for cancer

cases alone. This is an estimated incidence of this disease among the veterans of World War I.

The American Cancer Society initiated cancer research during 1945 and allotted \$500,000 toward this research work. They arranged with the National Research Council to serve as their research advisor. In turn the N. R. C. appointed the Committee on Growth which has appointed committees of some eighty authorities in nineteen different fields of cancer research to act as advisors and participants in one of the largest coordinated research projects ever organized to study thoroughly a human ailment. They will have a central clearing house for gathering, filing and disseminating information on all phases of cancer research being done throughout the nation. During 1946 the American Cancer Society hopes to add \$3,000,000 to kindle the fire of this immense project. As the representatives of science in our individual communities, we should take important parts in this immense undertaking.—*Hygeia*, October, 1946.

VETERANS ADMINISTRATION PLAN

(Continued from page 175)

Office No. 8, and the applicant is assigned in one of the following grades: Senior, \$8,179.50; Intermediate, \$7,102.20; Full Grade, \$5,905.20; Associate Grade, \$4,902.00; Junior Grade, \$4,525.80, with twenty-five per cent additional pay granted physicians certified by one of the several American Boards. Within-grade pay increases are granted. Interested applicants may apply to the Chief Medical Officer, Medical Division, Regional Office, Des Moines.

Further Advances in Tuberculosis Control

(Continued from page 173)

mette-Guérin bacillus, a strain of tubercle bacillus deprived of its virulence by a series of cultures in glycerinated oxgall and used for prophylactic vaccination of newborn infants. The theory is that a certain degree of immunity can be created by injection of an attenuated form of tubercle bacilli of the bovine type. The United States Public Health Service plans to conduct a practical experiment using B. C. G. in the near future.

Present indications would lead us to believe that race has little effect on the spread of tuberculosis. If one compares the mortality rate from tuberculosis in the Negro race with the mortality rate from tuberculosis in the white race of a few years ago, he finds that there is very little difference, indicating, of course, that it is not due to the race factor but to other reasons. The consensus seems to be that a noninfected person who is exposed to tuberculosis will likely develop a positive tuberculin reaction within three to seven weeks following exposure. This has been confirmed by the use of the tuberculin test among

student nurses assigned to duty in hospital wards where active tuberculosis is being treated.

If the excellent work which is being done by our county tuberculosis associations is allowed to continue with the cooperation of the State Department of Health, it is only to be anticipated that further progress will be made in the control of this disease. The important consideration is to prevent all persons from becoming infected and reinfected with the tubercle bacillus.

TWO HISTORIC CORNERSTONES

(Continued from page 177)

pathologic anatomy that had been so carefully collected, as well as many historic treasures that could never be replaced.

The old building represented an important chapter in the life of the medical school, and there was sadness in its passing. Yet already on that Sunday morning the vision, since so well fulfilled, was clear—that Phoenix-like, there would rise from the ashes a greater medical school than ever before. Within its old walls the spirit of a newer medicine had been born, and with the fine new buildings that came, a modern hospital and specially trained teachers followed a quarter century later by the present greatly enlarged new medical center, a dream has come to realization of great import and credit to the University and the state.

It will ever be a source of gratification that these two historic medical cornerstones have been preserved.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p. m.

WSUI—Thursdays at 2:45 p. m.

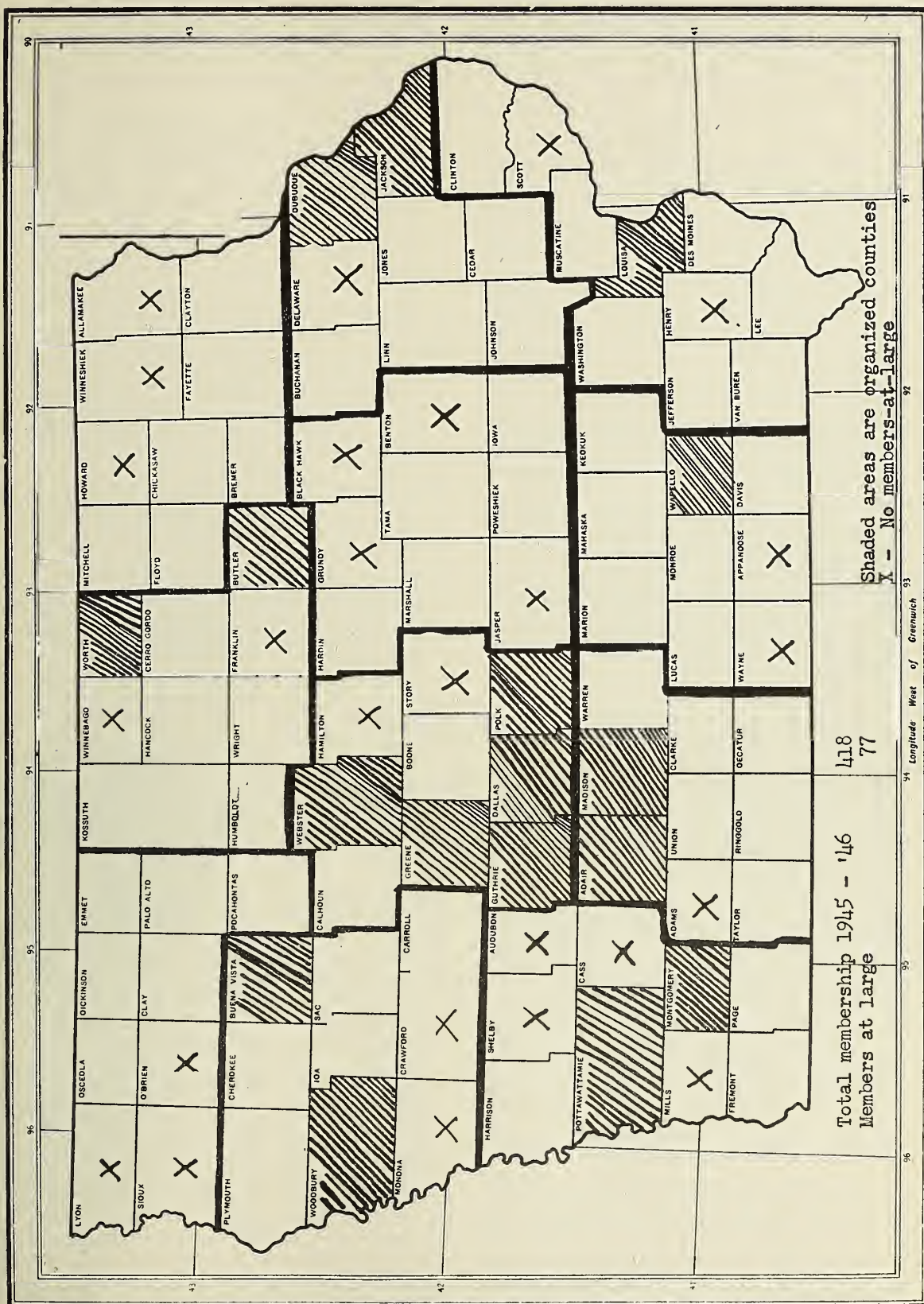
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| April 2-3 | The Thyroid and Its Disease | J. R. Morrison, M.D. |
| April 9-10 | Diet in Health | C. G. Nicholson, M.D. |
| April 16-17 | Rheumatic Fever | Robert L. Jackson, M.D. |
| April 23-24 | Diabetes | V. T. Lindsay, M.D. |
| April 30-May 1 | A Health Inventory | E. E. Shaw, M.D. |

INSTRUCTIONAL COURSE IN ALLERGY

The Mississippi Valley Sectional Instructional Course in Allergy will be given under the auspices of the University of Kansas School of Medicine, on May 5 to 8 inclusive, at the University of Kansas Hospitals in Kansas City, Kansas, and is sponsored by the American College of Allergists.

A well balanced program has been planned to specifically acquaint the physician with the basic principles of diagnosis and management of allergic diseases.

ORGANIZATION OF WOMAN'S AUXILIARY IN IOWA



THE JOURNAL BOOK SHELF

BOOKS RECEIVED

ALLERGY IN THEORY AND PRACTICE—By Robert A. Cooke, M.D., Sc.D., F.A.C.P., Attending Physician and Director of the Department of Allergy, The Roosevelt Hospital, New York City. W. B. Saunders Company, Philadelphia, 1947. Price, \$8.

GYNECOLOGICAL AND OBSTETRICAL PATHOLOGY WITH CLINICAL AND ENDOCRINE RELATIONS—By Emil Novak, A.B., M.D., D.Sc. (Hon. Dublin), F.A.C.S., Associate in Gynecology, The Johns Hopkins Medical School; Gynecologist, Bon Secours and St. Agnes Hospitals, Baltimore; Fellow, American Gynecological Society, American Association of Obstetricians, Gynecologists and Abdominal Surgeons and Southern Surgical Association; Honorary Fellow, Societe Francaise de Gynecologie; The Royal Institute of Medicine, Budapest; Sociedad d'Obstetricia et Ginecologia de Buenos Aires; Central Association of Obstetricians and Gynecologists; Texas State Association of Obstetricians and Gynecologists; Past Chairman, Section on Gynecology and Obstetrics, American Medical Association. W. B. Saunders Company, Philadelphia, 1947. Price, \$7.50.

AN INTEGRATED PRACTICE OF MEDICINE—A Complete General Practice of Medicine from Differential Diagnosis by Presenting Symptoms to Specific Management of the Patient—by HAROLD THOMAS HYMAN, M.D., Volumes I, II, III, and IV, and Index. W. B. Saunders Company, Philadelphia, 1947. Price, \$50 per set.

PARENTERAL ALIMENTATION IN SURGERY With Special Reference to Proteins and Amino Acids—By ROBERT ELMAN, M.D., Associate Professor of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo. Paul B. Hoeber, Inc., New York, 1947. Price, \$4.50.

PRACTICAL PHYSIOLOGICAL CHEMISTRY—By Philip B. Hawk, Ph.D., President, Food Research Laboratories, Inc., Long Island City, New York; BERNARD L. OSER, Ph.D., Director, Food Research Laboratories, Inc., Long Island City, New York; and WILLIAM H. SUMMERSON, Ph.D., Associate Professor of Biochemistry, Cornell University Medical College, New York City. Twelfth edition. The Blakiston Company, Philadelphia, 1947. Price, \$10.

QUARTERLY REVIEW OF OBSTETRICS AND GYNECOLOGY, Vols. I, II, and III, 1943, 1944, 1945—Washington Institute of Medicine, Washington, D. C., Price, \$25 per set.

1946 YEAR BOOK OF GENERAL MEDICINE—Edited by George F. Dick, M.D.; J. Burns Amberson, M.D.; George R. Minot, M.D., S.D., F.R.C.P.; William B. Castle, M.D., S.M., M.D., (Hon.) Utrecht; William D. Stroud, M.D.; George R. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1946. Price, \$3.75.

POSTGRADUATE OBSTETRICS—By William F. Mengert, M.D., Professor and Chairman, Department of Obstetrics and Gynecology, Southwestern Medical College; Chairman, Obstetrics and Gynecology, Parkland Hospital, Dallas, Texas. Paul B. Hoeber, Inc., New York, 1947. Price, \$5.

1946 YEAR BOOK OF GENERAL THERAPEUTICS, November, 1945-August, 1946—Edited by Oscar W. Bethea, Ph.M., M.D., F.A.C.P., Professor of Clinical Medicine, Tulane University School of Medicine (retired); Senior in Medicine, Southern Baptist Hospital; Consulting Physician, Charity Hospital, Member of the Revision Committee of the U. S. Pharmacopeia 1930-1940; Author of "Clinical Medicine" and "Materia Medica, Drug Administration and Prescription Writing." The Year Book Publishers, Inc., Chicago, 1946. Price, \$3.75.

1946 YEAR BOOK OF GENERAL SURGERY—Edited by Everts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.

RADIOLOGY FOR MEDICAL STUDENTS—By Fred Jenner Hodges, M.D., Professor and Chairman, Department of Roentgenology University of Michigan; ISADORE LAMPE, M.D., Associate Professor, Department of Roentgenology, University of Michigan; JOHN FLOYD HOLT, M.D., Assistant Professor, Department of Roentgenology, University of Michigan. The Year Book Publishers, Inc., Chicago, 1947. Price, \$6.75.

BOOK REVIEWS

INTRACRANIAL COMPLICATIONS OF EAR, NOSE AND THROAT INFECTIONS

By Hans Brunner, M.D., Associate Professor of Otolaryngology, University of Illinois College of Medicine, Chicago. The Year Book Publishers, Inc., Chicago, 1946. Price, \$6.75.

This book is a noteworthy contribution to the science of medicine. Based on a background of training with Professor Gustav Alexander, a period of the responsibility of postgraduate teaching in Vienna when the meticulous exacting scientific work in medicine and surgery was at its peak of perfection; a flight to a new country because of war conditions, and the mellowing and sobering influence of some of the ideals and practices of that new country, the author has a well rounded concept of his problems. He does not place undue emphasis on either the radical or the conservative treatment. He recognizes the value and the limitations of surgery and the medical management of intracranial conditions arising as complications of otorhinological disease.

The first section, "Anatomy and Physiology," deserves special mention. Clearly and concisely written, it contains a very excellent correlation of the

clinical tests and the physiology and pathology of the brain and spinal fluid. The photographs of anatomical specimens are well chosen and reproduced. The diagram of the veins of the brain and face is one of the several "gems" contained in the book.

The second edition, "Clinical Aspects," covers inflammatory diseases of the dura mater, the dural sinuses, the leptomeninges, and of the brain, including abscess and encephalitis. The structures mentioned above are discussed in their several divisions, each division being divided into a section on pathology, symptomatology, prognosis, and treatment. Differential diagnosis is well covered.

The book is "not intended to serve as a textbook." The author assumes that the reader is acquainted with the principles of both otorhinology and neurology. For this reason it is not recommended for those not interested in these fields except as a profitable and stimulating way to improve their general fund of knowledge. The book should be a "must" for every student of otology and neurology. The neurosurgeon as well as the otological surgeon will find it very valuable as an addition to his library for frequent reference.

B. M. M.

DIAGNOSIS AND TREATMENT OF MENSTRUAL DISORDERS AND STERILITY

By Charles Mazer, M.D., F.A.C.S., Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania; Gynecologist to the Mount Sinai Hospital, Philadelphia; and S. LEON ISRAEL, M.D., F.A.C.S., Instructor in Gynecology and Obstetrics, School of Medicine, University of Pennsylvania; Associate Gynecologist to the Mount Sinai Hospital, Philadelphia. Second edition. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York, 1946. Price, \$7.50.

Since the disorders of menstruation and the investigation of sterility problems are so commonly encountered in clinical practice, this textbook, which covers the latest information in this particular field, should be on the desk of every active physician. The second edition of this rather unusual book makes it possible for the busy physician to have at his finger tips the newest data concerning the diagnosis and treatment of the common gynecologic complaints relating to menstruation.

The first third of the book is devoted to the discussion of the factors involved in normal menstruation, including chapters dealing with the relations of the ovary and pituitary gland to this phenomenon. These authors make every attempt to explain menstruation and the disorders of menstruation in terms of the most modern concepts. The middle half of the text is concerned with the discussions of the abnormal aspects of menstruation including dysmenorrhea, premenstrual tension, amenorrhea in all of its various aspects, and uterine bleeding. The chapters dealing with the causation of uterine bleeding are well worth close scrutiny. The remainder of the book deals with those factors concerned in the problems of sterility. Throughout the whole text, new concepts are elaborated, new diagnostic methods and new forms of treatment are presented in detail.

This textbook can well serve as a very practical manual and guide in this particular field and is highly recommended.

A. W. B.

PHARMACOLOGY AND THERAPEUTICS

Originally written by ARTHUR R. CUSHNY, M.A., M.D., LL.D., F.R.S., Late Professor of *Materia Medica* and Pharmacology in the University of Edinburgh. Thirteenth edition, thoroughly revised by ARTHUR GROLLMAN, A.B., Ph.D., M.D., F.A.C.P., Professor of Medicine and Chairman of the Department of Experimental Medicine, and Professor of Pharmacology and Chairman of the Department of Physiology and Pharmacology, The Southwestern Medical College; Attending Physician, The Parkland Hospital, and Consultant in Internal Medi-

cine, The Baylor University Hospital, Dallas, Texas; and DONALD SLAUGHTER, B.S., M.D., Dean of Medical School, University of South Dakota; formerly Professor of Pharmacology and Chairman of the Departments of Physiology and Pharmacology, the Southwestern Medical College, Dallas, Texas. Lea and Febiger, Philadelphia, 1947. Price, \$8.50.

This standard textbook now presented in its thirteenth edition has been thoroughly revised by Drs. Grollman and Slaughter. The notable advances in the fields of chemotherapy, endocrinology, and therapeutic use of vitamins has been included. Penicillin, streptomycin, and other antibiotics are also discussed. This textbook should maintain its popularity with teachers, students, and practitioners of medicine.

E. M. G.

THE TREATMENT OF DIABETES MELLITUS

By Elliott P. Joslin, A.M., M.D., Sc.D., Medical Director, George F. Baker Clinic, New England Deaconess Hospital; Clinical Professor of Medicine Emeritus, Harvard Medical School; Consulting Physician, Boston City Hospital; HOWARD F. ROOT, M.D., Physician-in-Chief, New England Deaconess Hospital; Consultant in Medicine, Eastern Maine General Hospital, Massachusetts State Infirmary, Tewksbury, Middlesex County Sanatorium; Associate in Medicine, Harvard Medical School; PRISCILLA WHITE, M.D., Physician, New England Deaconess Hospital; Instructor in Pediatrics, Tufts College Medical School; ALEXANDER MARBLE, A.M., M.D., Physician, New England Deaconess Hospital; Instructor in Medicine, Harvard Medical School; Colonel, Medical Reserve Corps, U. S. Army; Chief, Section of General Medicine, Branch No. 1 (New England), Veterans Administration; C. CABELL BAILEY, M.D., Physician, New England Deaconess Hospital; Research Fellow in Medicine, Harvard Medical School. Eighth edition. Lea & Febiger, Philadelphia, 1946.

Once again, in this eighth edition of his authoritative work, Joslin depicts in masterly fashion the story of diabetes. It brings the reader up to date on the known facts concerning the etiology and physiology of the disease, discusses every problem and complication that can arise, and portrays step by step his conservative system of treatment and management. A chapter on alloxan diabetes, with hints as to what may be expected in the future, adds much interest.

The first chapter, elaborating the present conception of diabetes, reads like a novel. Other chapters are somewhat weighty in detail and statistics. Physicians who treat diabetes will find here a reliable reference text on all aspects of the disease.

A. G. L.

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk County

The Black Hawk County Medical Society met March 18 in the Russell-Lamson Hotel, Waterloo. Dr. Roy Fouts, Speaker of the House of Delegates of the American Medical Association, spoke on "The Art of Medicine."

Cerro Gordo County

The Cerro Gordo County Medical Society met at Hotel Hanford, Mason City, on March 11. Dr. A. S. Black of the Mayo Clinic, Rochester, Minn., spoke on "Modern Management of Goiter," illustrating his talk with moving pictures.

Clinton County

Dr. Robert C. Hardin of the Department of Medicine, University of Iowa College of Medicine, was the principal speaker at the regular meeting of the Clinton County Medical Society held in the Lafayette Hotel, Clinton, March 6.

Greene County

The Greene County Medical Society members were entertained by the Greene County Dental Society February 13 in Hotel Lincoln, Jefferson. Following dinner, the dental society held a short business meeting.

Johnson County

The Johnson County Medical Society met at Hotel Jefferson, Iowa City, March 5. Following a six o'clock dinner, Dr. V. K. Stoelting, resident in the Division of Anesthesia, University Hospitals, presented a review of the literature on "Status Lymphaticus." Dr. E. D. Warner, Professor and Head of the Department of Pathology, University Hospitals, opened the discussion.

Linn County

Dr. Gilbert H. Marquardt, Associate Professor of Medicine at Northwestern University Medical School, discussed "Vascular Diseases" at a meeting of the Linn County Medical Society in the Montrose Hotel, Cedar Rapids, January 9. Dr. Marquardt illustrated his lecture with slides showing surgery used in the treatment of the disease.

Marshall County

The Marshall County Medical Society met at St. Mary's Auditorium, Marshalltown, March 4. Dr.

Ruben Nomland, head of the Department of Dermatology at the University of Iowa College of Medicine, spoke on "Disorders of the Skin a General Practitioner Should Recognize." He illustrated his talk with colored slides.

Poweshiek County

Dr. Earl D. Hubbard of the United States Bureau of Animal Industry addressed the Poweshiek County Medical Society February 11 on "The Brucellosis Problem." Dr. Carl F. Jordan of the State Department of Health was a guest.

Scott County

At the March meeting of the Scott County Medical Society, Dr. John Kapernick of Decatur, Ill., spoke on "Some New Ideas in Handling Arteriosclerosis." Preceding the meeting, which was held in the Lend-a-Hand Club March 4, there was a dinner and business meeting.

Upper Des Moines Valley

The mid-winter meeting of the Upper Des Moines Valley Medical Society was held February 20 in the Gardston Hotel, Estherville. Wives of the members were guests at a dinner following which the scientific program was presented. Dr. Bertil Rosenberg of the Department of Radiology, State University of Iowa, spoke on "Common Lesions of the Upper Gastro-intestinal Tract"; Dr. Alonzo L. Jenks of Des Moines spoke on "The Early Diagnosis of Carcinoma of the Stomach"; and Dr. Carl A. Jacobs of the Department of Surgery, State University of Iowa, talked on "Some Aspects of the Diagnosis and Treatment of Carcinoma of the Colon."

Washington County

The regular meeting of the Washington County Medical Society was held in the Nurses' Home, Washington, February 27. Following a 6:30 o'clock dinner, the members discussed current problems, particularly the improvement of hospital service.

PERSONALS

Dr. A. J. Brier has opened offices for the general practice of medicine in Baxter. Dr. Brier came from Topeka, Kan., where he had practiced for over twenty years.

Dr. C. M. Cantrell of Lone Tree has accepted an appointment as a member of the staff of the Uni-

versity Hospitals, Iowa City. His work will be in the field of radiology.

Dr. Ada Dunner, who has for the past eight years been senior physician at the Norristown, Pa., state hospital, has accepted an appointment as acting chief of the psychiatric clinic at the Veterans Administration Hospital, Des Moines.

Dr. M. D. Enna, who has been practicing in George the last six months, has entered into partnership with Dr. A. C. Wubben of Rock Rapids. Dr. Enna was formerly associated with Dr. F. B. O'Leary.

Dr. J. R. Gardner of Lisbon spoke to the American Legion and Auxiliary at a joint meeting February 17 on mental health and conditions in the state mental hospitals.

Dr. Bernhard Gloecklar of Mount Pleasant will begin practice April 1 in Hugo, Colo. With the exception of three years in the service, Dr. Gloecklar has practiced in Mount Pleasant since 1935. He will serve as Union Pacific railroad surgeon, city and county physician, and head a new hospital upon its completion in Hugo.

Dr. A. G. Gran addressed the Business and Professional Women's Club of Storm Lake recently, describing the important role preventive medicine has played in lengthening the average life span of the human race.

Dr. A. F. Grandinetti of Oelwein addressed the Knights of Columbus February 25. His subject was "Obesity."

Dr. B. F. Howar and Dr. Faye Lewis spoke to the civics department of the Webster City Women's Club February 24. Dr. Lewis discussed various plans open to the public for taking care of the expense of health. Dr. Howar reviewed the work of these plans as they have been demonstrated through use in England, Sweden, and Germany, contrasting them with the plan of private medicine as practiced in the United States.

Dr. John D. Lavender of Silver City has purchased the practice of Dr. F. B. O'Leary of George. Dr. O'Leary has bought stock in the Osceola County Hospital at Sibley and will make his home in that city.

Dr. Carl Matthey, school physician in Davenport, spoke to the Parent-Teacher Association members of Jefferson School in that city March 4.

Dr. J. F. Meany of Rockwell has announced that Dr. Edward F. Flemming of Omaha has entered into partnership in the practice of medicine with him. A graduate of the Creighton University School of Medicine, Dr. Flemming was recently discharged from the armed forces after serving three years in the Pacific area.

Dr. Byron M. Merkel of Des Moines was guest speaker at the Friendly hour of the Des Moines Hearing Society February 16.

Dr. P. A. Nierling of Cresco was elected president of the medical staff at the annual election of St. Joseph's Mercy Hospital in that city. Dr. L. J. Hospodarsky of Ridgeway was elected vice president and Dr. D. O. Maland, Cresco, secretary-treasurer.

Dr. W. E. Owen will begin medical practice in St. Ansgar in the near future. Dr. Owen received his release from the navy in February after five years of service. He attended Columbia University, New York City, and served his internship at Good Samaritan Hospital, Boston, Mass.

Dr. Eugene Penn of West Des Moines addressed the Rotary Club of that city February 17. He discussed "Fatigue."

Dr. Vernon W. Petersen spoke at the annual junior-senior banquet of the Jane Lamb nurses held in LaFayette Hotel, Clinton, March 4. He told of his experiences as an army doctor in Burma.

Dr. Paul C. Richmond was guest speaker of the Business and Professional Women's Club, New Hampton, at the group's February meeting. He traced the history of medicine briefly, giving more detailed information concerning recent drug discoveries and advances.

Dr. Justus B. Roberts of Ottumwa was appointed a fellow of the American Academy of Pediatrics at the group's annual meeting in Pittsburgh. He was also appointed a member of the board.

Dr. Arthur Steindler, head of the Orthopedic Surgery Department, State University of Iowa, was recently named to the board of governors of the American College of Surgeons "for outstanding service to the university and the nation." Fellowships were awarded Dr. William C. Huffman, Dr. Carl A. Jacobs, Dr. Vernon G. Watters, Jr., and Dr. Walter W. Webb.

Dr. Fred Sternagel was elected president of the Polk County Tuberculosis Association at the group's meeting held in Hotel Fort Des Moines, Des Moines, March 7. Dr. Edward J. Drew was named second vice president.

Dr. A. J. R. Stueland addressed the Wise Men's Club of Mason City February 25 on preventive medicine.

Dr. Julius Weingart of Des Moines spoke at a meeting of the Iowa Lutheran Hospital Society March 13 held at the nurses' home. His subject was "A Neglected Therapeutic Agent."

Dr. Ruth F. Wolcott of Spirit Lake spoke on "County Health and Hospital" at the regular meeting of the Westport Farm Bureau February 26.

Dr. R. W. Wood of Newton has announced that he has resumed his practice of medicine, specializing in diseases of the eye, ear, nose and throat. Dr. Wood has been vacationing since last September.

Dr. J. K. von Lackum of Cedar Rapids acted as moderator for a panel discussion on "Health in Public Schools" presented by the P.T.A. Council of that city. Dr. A. F. Harrington was one of the speakers.

MARRIAGE ANNOUNCEMENTS

Sloan-Berbos

The marriage of Miss Sally Ann Sloan, daughter of Mr. and Mrs. John R. Sloan, to Dr. James N. Berbos, son of N. J. Berbos of Aberdeen, S. D., was solemnized February 5 in St. Luke's Episcopal Church, Des Moines, by the Rev. R. R. Hardin. The bride is a graduate of the University of South Dakota and the groom of the same school and the University of Louisville College of Medicine. Following a wedding trip, Dr. and Mrs. Berbos established their home in Des Moines where Dr. Berbos is associated with Broadlawns General Hospital.

Trabold-Kerr

Miss Norma Hayes Trabold, daughter of Mr. and Mrs. Frederick Trabold of Wrightstown, Pa., and Dr. Harold H. Kerr, son of Dr. and Mrs. J. H. Kerr of Akron, were united in marriage February 15 in the Church of the Heavenly Rest, New York City. The bride is a graduate of Spencemore College, Saratoga, Springs, N. Y., and the groom of the University of Nebraska College of Medicine.

Following a trip, the couple established a home in Akron where Dr. Kerr is practicing medicine.

Showers-Blumgren

Miss Susan Anne Showers, daughter of Mr. and Mrs. Charles N. Showers of Iowa City, and Dr. John E. Blumgren, son of Mr. and Mrs. John Blumgren of Logan, were married February 27 in Westminster Presbyterian Church, Cedar Rapids. The bride was graduated from the State University of Iowa College of Pharmacy in 1946 and the groom from the College of Medicine in 1941. The couple are at home in Vinton where Dr. Blumgren is a member of the Lovett Clinic.

Refsell-Lindholm

Miss Helen Ann Refsell, daughter of the late O. N. Refsell and Mrs. Refsell of Estherville, and Dr. Hugo A. Lindholm, son of Mrs. L. Lindholm of Iowa City, were married March 2 in the Lutheran Church, Estherville. Mrs. Lindholm is a graduate of St. Olaf's College and Dr. Lindholm of the State University of Iowa College of Medicine. Dr. Lindholm interned at Lutheran Hospital in Des Moines and practiced in Estherville before serving in the army three and one-half years. He is now practicing in Armstrong where the couple will reside.

DEATH NOTICES

Brittall, Chauncey Lee, of Chariton, aged 64, died at his home February 15 following a heart attack. Dr. Brittall was graduated from the State University of Iowa College of Medicine with the class of 1907. He was a member of the Lucas County and Iowa State Medical Societies.

Parish, Ora Frank, of Grinnell, aged 73, died February 16 in the Community Hospital, Grinnell, following an extended illness. A graduate of Rush Medical College with the class of 1903, Dr. Parish was a life member of the Poweshiek County and Iowa State Medical Societies.

Rasmussen, Carl Christian, aged 51, of Atlanta, Ga., died December 7 in a hotel fire in that city. A graduate of the Northwestern University Medical School in 1925, Dr. Rasmussen was a member of the Polk County and Iowa State Medical Societies at the time of his death.

Struck, Kuno Herbert, of Davenport, aged 63, died March 4 at his home following a stroke. He was graduated from the State University of Iowa College of Medicine in 1906 and was a member of the Scott County and Iowa State Medical Societies.

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THE PRESIDENT'S ADDRESS

THE DOCTOR'S ROLE IN PUBLIC RELATIONS

Robert L. Parker, M.D., Des Moines

During the past few years, we of the medical profession have come increasingly to recognize good public relations as one of the most important phases of our work. It is the position of the individual physician and of the society as a whole in meeting this responsibility that I would like to discuss with you tonight. Surveys have shown that when an individual is questioned about medical care, he almost invariably feels his own doctor is all right; his criticism, if any, is directed toward medical practices of other physicians about which he has heard. It is obviously true that in medicine, as in many other fields, poor conduct on the part of a small minority brings disrepute upon the entire group.

The day is probably past when we as individual physicians can shape our own ends. We are bound more or less inextricably into the group of organized medicine as a whole; upon the service rendered by organized medicine we will be judged.

It is just as true, however, that probably never before in the history of medicine have there been so many opportunities for organized medicine to build up good public relations—so many channels for service of a group character. It is of these that I shall speak tonight.

The newest form of group medical service is probably home care of veterans. The first movement in this direction was made by a county medical society in New Jersey in August, 1945; it was allowed to drift because the Veterans Administration in Washington did not think it would work. Later on, however, when General Bradley and General Hawley were trying to devise procedures to bring medical care to veterans faster than was possible through the Veterans Hospital system,

the offer was discovered and heartily approved by both men. Michigan with its existing program of prepaid medical care was the first state to sign a contract to give home care to veterans. This took effect in January, 1946. Immediately following that date many states, including Iowa, took steps to provide the same type service to veterans within their borders.

In Iowa, our contract became effective Feb. 1, 1947. Authorizations for examinations and treatments have been issued since that date and many Iowa physicians have participated actively. All Iowa doctors are eligible to work in the program; in fact, we hope all Iowa doctors will want to participate since that would mean a wider distribution of medical service for the veteran. The fee schedule for this work is very fair. The doctor who works under it will receive an equitable sum for his service. I mention this because, after all, remuneration plays a part in any service. The important thing, however, is the opportunity each participating doctor has to boost the stock of organized medicine. The better job he does, the better the veteran will fare and the more favorable will be the reaction to the medical society sponsored program. I can't urge you too strongly to put your wholehearted enthusiasm and support into this program. Over a third of our Iowa doctors served in the armed forces during World War II. Some of them are with us tonight. I am sure they as well as those of you who fought on the home front will endorse my plea to give the veteran the best medical service possible. The officers and committee members of your society have told the Veterans Administration and the veterans that we can and will do this job. You as the individual doctor can make good our promises.

The second important part of public relations is probably our medical insurance plan. I know there are doctors here tonight who pooh-pooh the need for this plan. They say that incomes are good and people don't need it, but in so doing they take a shortsighted view, ignoring completely the social aspects of the problem. The Wagner-Mur-

ray-Dingell bill did not originate without some demand on the part of the people. It is not solely its founders' brain child. The fact is that people do want and need this type of budgeting for medical care. It is a sad fact that the insurance is easier to sell to the public than to the medical profession. If we are wise, we will push this program as hard as we can during this period when incomes are good (good enough that people can afford to buy the insurance), because once having benefited from its protection, experience shows they hang on to it even when incomes are reduced. Looking at it from a selfish standpoint, we should be able to foresee the time of lower incomes when the insurance plan will be an enormous benefit to the medical profession—a buffer against poor collections.

The Health Improvement Associations in the various counties of Iowa are greatly interested in medical and hospital insurance; they are large potential buyers. The Farm Bureau is as opposed to compulsory insurance as are we of the medical profession, but it is strongly in favor of voluntary insurance. It can be a powerful ally in combating government medicine, but we must do our part. It will not suffice for your Committee on Medical Service and Public Relations to foster friendly relations with the Farm Bureau; as individual physicians we must do our part by participating in the provision of medical care on a voluntary prepayment system.

Labor groups are very firm in demanding some better method of providing for medical care than they have had in the past. Some of them feel compulsory insurance is the only answer, but we in Iowa are fortunate because they are willing to give us a trial. The manner in which we provide a method of budgeting for medical care and the spirit in which we render the service will be the determining factors. This is public relations—public relations in one of its most important phases, and I cannot urge you too strongly to throw your support to Iowa Medical Service.

There are also many governmental agencies with medical problems, and the medical profession has a definite opportunity to foster good public relations by the manner in which it functions in these necessary services. For example, we have a vocational rehabilitation program in Iowa which has for its purpose removal of persons from a dependent state to one of independence. The service provides, among other things, removal of physical handicaps which are a bar to gainful employment, job counseling, training and placement. As physicians we have a part in that phase connected with physical disabilities. In the year July, 1945, to July, 1946, only four persons were referred to

this department by physicians, yet we as physicians see many people in our practice who may need just such a service. We see the victims of corn picker and automobile accidents, patients with physical disabilities resulting from poliomyelitis, rheumatic heart disease, etc. If some help or training will enable these persons to become employable, they may look to the Division of Vocational Rehabilitation for counseling and service. I am happy to say that following a letter sent out by our office in regard to that service, Mr. Grant, the director, reports a marked increase in the number of physicians referring patients. This is public relations, gentlemen. As we look beyond the mere physical care of these persons and help them gain some sort of financial independence, we are practicing good public relations as well as good medicine.

The old age assistance program and the aid to the blind offer us other opportunities. The State Department of Social Welfare is doing its utmost to improve the conditions under which medical care is given to these persons; we as physicians can demonstrate good public relations by our willingness to cooperate and help in the work.

The functions of the State Department of Health are educational and preventive in nature. They would not be very successful, however, without the cooperation of the physician in private practice, and we have, I feel, done a good job of public relations in our support of the cancer, tuberculosis, venereal disease control, and maternal and child health programs. I do not mean there is not need for more support; there is, but I feel we have demonstrated our wish to cooperate in this work. Our interest in and support of preventive medicine is good public relations.

As physicians we also have an opportunity to promote good relations in our attitude toward the health problems of the public schools. Many physicians serve on boards of education, devoting much time and thought to school problems. Others help by serving as school physicians. There are really many problems which concern the medical profession and the school, among them the health factors involved in masses of children congregating together, the personalities of teachers as they affect children, expenditures for providing good hygiene of the environment, and the teaching of health and hygiene. Then, too, physicians should be concerned in the procedures for handling accidents and illnesses occurring at school, control of nuisance skin diseases, hiring of medical and nursing personnel, duties of special health personnel, conflicts between individual physicians and school health procedures, provisions for the physically handicapped child, and problems arising from the

athletic program. As citizens we are interested in our schools; as physicians we should be interested in these health matters and should lend our support and advice as a matter of good public relations.

Within our own society, we have several channels for promoting public relations which I wish to stress. Our Committee on Medical Service and Public Relations has been mentioned before. The work of that group has been divided and assigned to individual physicians, each of whom may have a subcommittee working with him. Dr. Olsen has been assigned insurance matters; Dr. Gutch, the veterans program in which he has been assisted by Dr. E. M. Honke of Sioux City and Dr. J. S. McQuiston of Cedar Rapids. Dr. Shaw has rural health, with Dr. C. A. Nicoll of Panora to serve with him; Dr. Konzett, the mental hospital problem; Dr. Maxwell, economic problems, among them old age assistance and aid to the blind; Dr. Bernard, national legislation; and Dr. Sternagel, state governmental agencies except for mental hospitals and board of control problems.

Our Speakers Bureau provides an excellent medium for good public relations. Before the war speakers were provided for many lay groups, and a great effort was made to promote health education, both professional and lay. Activities were curtailed during the war although the weekly radio talks never lapsed. Now the Bureau is once more activating its program; postgraduate courses for the doctors are being offered in different sections of the state; county society programs are being provided; and the lay education program will be renewed in the near future.

Our Legislative Committee has set an example of good public relations in the last two years. With no special legislation of our own to promote, we lent our support to measures designed to better public health. We helped the Iowa Tuberculosis Association draw up legislation providing more liberal hospitalization for victims of tuberculosis and have been working for its passage. We advised the Iowa State Nurses' Association on legislation affecting licensure of graduate, registered and practical nurses. We worked with the Iowa Hospital Association in seeking revision of the ceiling for workmen's compensation cases; we counseled with the State Department of Health on legislation eliminating township boards of health and substituting therefor county boards of health, on a licensure bill for hospitals, and on enabling legislation for hospital construction under the Hill-Burton bill. We also endorsed legislation submitted by the Iowa Society for Crippled Children which would provide better educational opportunities for those thus afflicted.

None of these bills was proposed by us, but since

all of them were for the public good, we were glad to help with their preparation when asked and with their support after they were introduced.

Now, last but not least, we have an excellent medium for public relations through our Woman's Auxiliary. The American Medical Association is urging the expansion of the Woman's Auxiliary and has given the group space and office help at national headquarters. The Rich report recognized the potentialities of the Auxiliary and urged that the wives of doctors be utilized for public relations. It is our wives who have close contact with many lay groups, and they can do an excellent job as our representatives. They are anxious to be of help but they need guidance and assistance. Certainly they have our interests at heart more than anyone, and if we keep them informed of our policies, our activities, our philosophies and our beliefs, they will "spread the gospel" in their daily contacts. I have been associated more or less closely with the officers of the Auxiliary during my years as secretary, and I know how anxious they are to do this work.

In summary, let me say that I think most doctors are good public relations experts with their individual patients and their individual problems. Today, however, that is not enough; we must be good public relations experts on the many facets of the practice of medicine; we must be cognizant of the fact that we are a part of the whole and that the problems of the whole are also our problems. Isolation does not exist today; we have moved beyond that. We must adapt our way of living and our mode of expression to new sociologic factors and demands if we are to live up to the purpose to which we dedicated our lives when we undertook the study of medicine.

PRESIDENT-ELECT'S ADDRESS

LEADERSHIP IN MEDICINE

Harold A. Spilman, M.D., Ottumwa

The medical world today looks to the profession in the United States for leadership. Our scientific and technical achievements have earned for us this high regard. This has not been accomplished in any haphazard fashion, nor has it been accomplished as the result of governmental authority or direction. Pre-eminence in medicine is the result of the individual initiative, the spirit of cooperation and wholesome competition among doctors, who have had a sound education and who work in an environment conducive to achievement.

The profession in the past has been confronted with and solved many difficult problems. We are

today facing many more. Chief among them are adequate care of service connected disabilities of our veterans and the widespread, persistent efforts to nationalize American medicine. The former is being worked out by intelligent cooperation between the Veteran's Administration and the various state medical societies. Constant vigilance of an alert, militant and aggressive medical profession will be required to avert disaster in the latter case. Since 1934 the United States has been a member of the International Labor Organization. This organization has been dominated by socialistic leaders, and one of its objectives is the nationalization of medicine in all member countries. The average doctor is engrossed in his work, and because his relations with his patients are satisfactory he is inclined to discount the threat of political medicine and to think it cannot happen to him. He lacks the militant combative spirit in his organization work which he utilizes to its fullest extent in his fight against disease.

Communism is a real menace to our country and that way of life and government which has made us a great nation and a world power. It works by stealth and subterfuge and never ceases its fanatical efforts. Nationalization of medical practice is definitely one of its first objectives. Our individual obligations are to try every day to become a better doctor, to strive earnestly and intelligently to improve the public health, to foster educational and legislative measures which promote the physical and mental health of our community and be ever alert to detect, expose and combat measures which seek to create a bureaucracy.

As a society let us strive to live up to the standards which are so well expressed in Article 2 of our constitution, Purposes of the Society: "The purpose of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of Iowa, and to unite with similar associations in other states to form the American Medical Association, with a view to the extension of medical knowledge and to the advancement of medical science, to the elevation of the standard of medical education and to the enactment and enforcement of just medical laws, to the promotion of friendly intercourse among physicians and to the guarding and fostering of their material interests, and to the enlightenment and direction of public opinion in regard to the great problems of state medicine; so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life."

HEMIPELVECTOMY IN THE TREATMENT OF OSTEOGENIC SARCOMA OF THE ILIUM

Louis T. Palumbo, M.D., Des Moines

Since the original hemipelvectomy operation by Billroth¹ in 1891, about 132 cases have been reported in the literature. In 1894 the first successful operation in which the patient survived the procedure was reported by Girard.⁴ During the ensuing 55 years many terms have been used to describe the procedure, such as transiliac amputation, interilio-abdominal amputation or disarticulation, interpelviabdominal disarticulation, hind-quarter amputation, transischiosacropubic disarticulation, interiliosacropubic disarticulation, and innominate bone disarticulation.

Two primary factors must be taken into consideration in the evaluation of an operative procedure for malignant tumors: namely, the primary operative mortality and the long-range end results as to cure or recovery. The disability resulting from such a procedure is considerable since the patient cannot be fitted with a prosthesis and must depend upon crutches for ambulation.

The operation and immediate postoperative mortality as reported by a survey made by Gordon-Taylor and Wiles,⁶ Gordon-Taylor and Patey,⁵ British surgeons, was 59.5 per cent in a series of 79 cases. However, the over-all mortality rate was about 36 per cent. In the past eleven years the mortality has dropped to 14 per cent.¹³ In 21 personal cases reported by Gordon-Taylor⁵ the operative mortality was 29 per cent and in his last 10 cases the rate was 20 per cent. The major cause of death was shock at the time of operation or a few hours afterward. With a better knowledge of anatomy, anesthesia, and methods of combating shock, the present operative mortality rate can be reduced.

Indications:

Hemipelvectomy is indicated for primary malignant osseous and periosteal tumors of the upper femur where the growth has extended to or through the hip joint and for similar tumors of the innominate bones. Large primary malignant soft tissue tumors of the upper thigh (involving the hip joint or extending through the obturator foramen), groin, buttock, pelvic parietes and iliac region are best treated by this type of amputation.^{2, 6, 7, 8, 10, 11, 12}

Occasionally this radical procedure has been performed in the palliative therapy of cancer. In these cases, according to Pack, elimination of sep-

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Note: This report and review is not intended to represent the views of the Veterans Administration but only those of the author.

sis and pain and conversion of a foul smelling, bed-ridden patient to comfort and partial activity can be accomplished in certain hopelessly advanced cases.⁹

Massive osteochondromas of the pelvis and massive plexiform neurofibromas involving the upper thigh, groin, and hip joint or buttock and pelvic parietes are treated in this manner.^{9, 13}

It is important that an anatomic diagnosis be established by aspiration or open biopsy before radical amputation or any other form of therapy is instituted.

Preoperative Management:

A complete survey is made to rule out any evidence of local pelvic parietes involvement or distant metastasis.⁴ This includes the necessary x-rays of other bones, lungs, intravenous pyelograms, and barium enema, if necessary, and complete blood studies to include blood count, serum protein determination, and nonprotein nitrogen. Any changes that are not normal should be corrected by the necessary measures such as blood transfusion and parenteral administration of amino acids.

The insertion of a rectal tube and a Foley catheter prior to surgery will be a great aid in localization of these important structures during surgery. These also serve in the postoperative management of the case. It is suggested that in cases of large tumors of the ilium the introduction of a ureteral catheter on the side of involvement will facilitate the localization of the ureter during the procedure and aid in the prevention of injury or inadvertent division of the ureter. The anesthetic agent used by various authors is inhalation anesthesia, continuous spinal, or spinal.^{5, 9, 13, 14}

Arrangements for blood transfusions should be made and completed prior to surgery, and it is recommended that a minimum of two but preferably three liters be on hand for immediate use.

Surgical Procedure:

The management and institution of methods to combat shock are paramount. As indicated by Morton,⁸ reduction in the incidence of shock can be expected in gentle handling of tissues and less harm by careful and deliberate dissection rather than by unnecessary speed and slashing of tissues. Several authors feel that frequent changes in position of the patient during the operation is a contributing factor toward shock.^{3, 6, 9}

However, it is felt that shock is primarily caused by blood, blood plasma, and tissue fluid losses; secondarily, by trauma, tissue manipulation, sectioning of large nerve trunks, and sudden changes in position of the patient that are necessary to carry out this procedure.

It is important to have intravenous fluids started prior to commencing the incision. Shortly after the operation is started, blood transfusion is begun. The anesthetist and surgeon should be certain that the veins being used for intravenous administration are adequate.

The position on the table is variable. Some authors begin with the patient first flat on his back as this case was done.^{8, 9} The anterior portion of the incision (fig. 1 A) extended from the symphysis pubis to the anterior iliac spine above

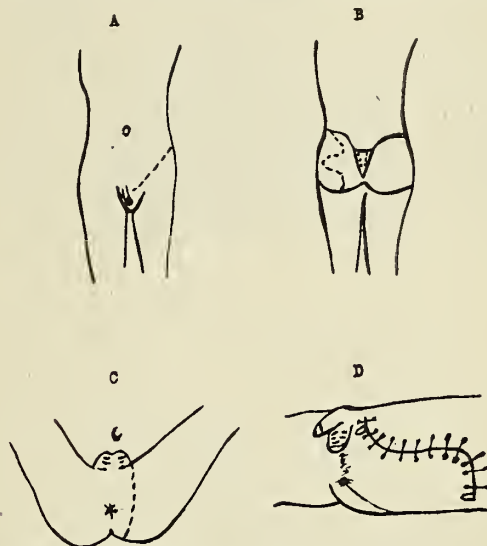


Fig. 1. A: Incision for anterior portion of operation. B: Incision for posterior portion of operation. C: Incision for perineal portion of operation. D: Wound closure with two drains.

and parallel to the inguinal ligament, and then along the medial border of the crest of the ilium to about the midpoint. This dissection was carried through the superficial fascia to the external oblique aponeurosis. The inguinal ligament was detached from the pubis and ilium and the rectus abdominis muscle was freed from the pubis. This frees all of the muscles of the anterior abdominal wall and permits extraperitoneal dissection. At this point the above flap was displaced upward and medially and the pelvic contents were then identified, such as the bladder, ureter, rectum, and sigmoid. These structures and their peritoneal coverings were displaced and retracted medially and held out of the field by large packs and retractors.

The external iliac vessels were isolated and the artery doubly ligated with chromic catgut and divided. The femoral nerve was injected with 95 per cent alcohol and divided high in the iliacus muscle.

Dissection was continued exposing the sacroiliac joint and the symphysis pubis was skeletonized. The symphysis was divided with the use of an osteotome, care being taken to prevent injury to

the penis and urethra beneath the joint. The inferior ramus of the pubis and ischium were exposed at the "white line" at which point the levator ani, pelvic diaphragm, and the obturator internus muscles were divided. These areas were packed off to control hemorrhage while the second phase of the operation was carried out.

The patient was then turned on his right side and the first incision was carried downward and across the top of the greater trochanter. At this point the incision was curved anteriorly for several inches and then downward toward the inferior gluteal fold (fig. 1 B). This dissection was carried through the skin and superficial fascia down to the gluteus maximus muscle. This posterior skin flap was dissected posteriorly to the sacral border on the left side.

The patient was then turned to the original position on his back and the dissection was continued anteriorly. The left lower extremity was then elevated to drain out as much blood as possible before ligation of the external iliac vein was accomplished. The obturator artery and vein were doubly ligated and divided. The obturator nerve was injected and divided.

After ligation of this vein the muscles of the anterior abdominal wall and the quadratus lumborum were cut free from their attachment to the crest of the ilium. The iliopsoas muscle was divided high at the level of the lumbosacral crest. The sacroiliac joint on the left was exposed and the joint was separated by the use of a chisel inserted by manual manipulation, pointing the blade obliquely lateralward. Considerable bleeding occurred at this point but was easily controlled by firm warm packs for a few minutes. The anterior dissection was now completed and the patient was turned again on to his right side.

The posterior dissection was now continued, cutting the gluteus maximus muscle free from the posterior aspect of the sacrum. This muscle was not saved, as recommended by some authorities to be used as a flap for closure, because the tumor was invasive, involving the gluteus medius and minimus posteriorly, and a portion of the obturator internus and piriformis anteriorly.

The left half of the pelvis was free now, except for the attachment of the piriformis, gemelli, and levator ani muscles which were divided near the pectineal line.

The sciatic tract was then injected and divided high up. The superior and inferior gluteal arteries and veins were ligated and divided.

The skin incision was then carried from the inferior gluteal fold medially around to the perineum and then up anteriorly to join the starting point of the incision at the symphysis (fig. 1 C).

The sacrotuberous and sacrospinous ligaments were divided and the entire left half of the pelvis and left lower extremity were freed and removed.

All bleeding points were controlled. Oxycel was placed over the raw surface of the sacro-iliac joint and behind the symphysis pubis. The wound prior to this was irrigated thoroughly with saline solution. Ten grams of sulfanilamide powder was placed in the wound and the area was closed by mattress and interrupted sutures of chromic No. 1 catgut, bringing together portions of the iliopsoas muscle and muscles of the anterior abdominal wall.

The quadratus lumborum muscle was sutured to the anterior groups of muscles. The remaining support to the pelvic content was obtained by suturing the subcutaneous tissues, the posterior flap to the same tissues of the anterior flap. Two long rubber drains were placed at opposite ends of the wound. The skin was closed by interrupted mattress dermal sutures (fig. 1 D). A snug bandage was applied.

Postoperative Management:

The patient was placed in an oxygen tent for twenty-four hours. Intravenous fluids, including plasma, amigen and daily blood transfusions were given for three days. On the third postoperative day there was no distension, and the patient was placed on surgical liquids and the diet increased daily. The rectal tube was removed on the third day and the indwelling catheter was removed after four days, but during this period tidal drainage was established and maintained. The patient had normal urinary control following removal of catheter, and bowels were functioning without difficulty after the third day. The patient was given 50,000 units of penicillin every three hours for six days.

Report of Case

Case 1

This patient, a 22 year old white male, was admitted to the hospital for the first time on Jan. 25, 1947. In September of 1945 while returning home from overseas, aboard ship, he noticed pain in his left hip with radiation of the same along the inner aspect of the thigh as far as the knee. He was discharged from the service on Jan. 6, 1946. Following his discharge the pain became progressively worse, being more severe at night. The pain was exaggerated on coughing or sneezing and was intense enough to cause limping when walking. During this period of time he was seen by several physicians and on Aug. 16, 1946, was seen in one of the clinics at which time he complained of low back pain. Physical examination at that time was negative, and an x-ray of his lumbosacral region was reported negative.

On Oct. 29, 1946, he returned to the same clinic with the complaints of left sciatica of four days' duration and pain on motion of the left hip. Recheck x-rays (fig. 4) at this time revealed a tumor of the left ilium involving the supra-acetabular region with extension toward the sciatic notch. The tumor showed evidence of both an osteoplastic and osteolytic process.

On Oct. 31, 1946, an open biopsy was taken from the mass of the left ilium. The microscopic report at that time was an osteogenic sarcoma. He was given a course of x-ray therapy from Nov. 8, 1946 to Jan. 24, 1947; a total of 3,528 roentgens anteriorly, posteriorly, and laterally of the left ilium. The other x-rays and examinations revealed no evidence of local or distant metastasis prior to admission here.

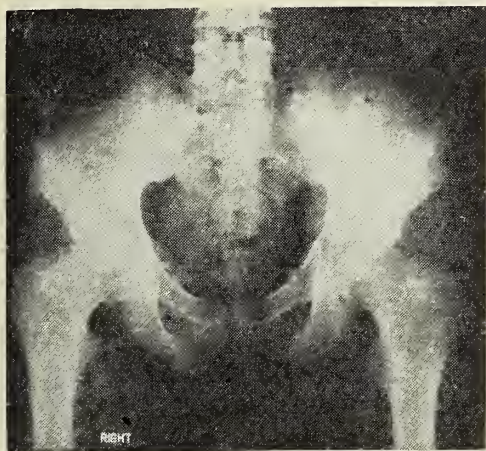


Fig. 2. X-ray taken Oct. 29, 1946. Tumor, left ilium.

The patient was then referred to this hospital for further examination and treatment. At the time of his admission he stated the pains were not as severe as they were before irradiation therapy. He noticed weakness of the muscles of the left lower extremity and had pain on walking. He lost only four pounds since the onset of his illness. He had no complaints referable to the gastro-intestinal or genito-urinary tracts.

The physical examination was essentially negative except for the area of the lateral wing of the left ilium. This area was fuller and firmer than the opposite side, and there was limitation of motion of the left hip joint. Motion of the extremity produced pain. Abdominal palpation medial to the left iliac crest gave a sense of fullness in the pelvis in the left iliac fossa. On rectal examination there was a sense of fullness and firmness on the left near the ischial spine. There was no evidence of local lymph node involvement or local extension to the rectum or bladder.

Stereoscopic x-rays of the pelvis on Jan. 30, 1947 (fig. 5), revealed an osteoplastic and osteolytic process involving the posterior aspect of the left ilium, extending downward toward the ob-

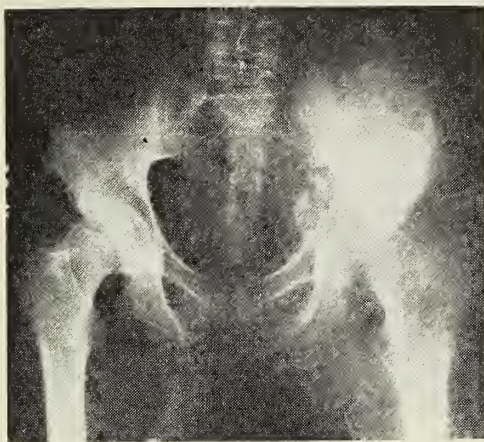


Fig. 3. X-ray taken Jan. 30, 1947. Extensive involvement of left ilium as compared with fig. 4.

turator foramen with growth occurring inward toward the pelvis. There appeared to be no soft tissue involvement in these areas. X-rays of the chest, lungs, and spine were negative.

Jan. 29, 1947: RBC—4,940,000; Hb.—14.5 gms.; WBC—6,900; Polys—68 per cent. Three days following surgery, Feb. 23, 1947: RBC—4,260,000; Hb.—12.5 grams; WBC—4,100; N.P.N.—48; total proteins—6; blood chlorides—480.

Feb. 6, 1947: blood calcium—8.7; alkaline phosphatase—7 Bodansky units. Urinalysis, normal. Blood serology, negative.



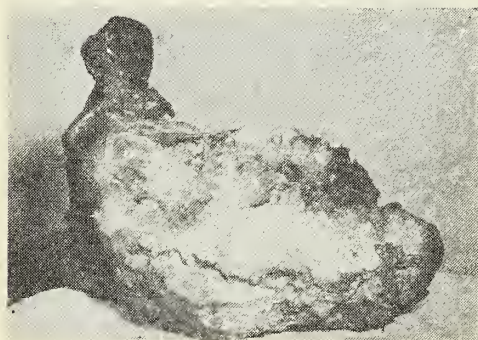
Fig. 4. Postoperative intravenous pyelogram, outlining good kidney function, left side with no obstruction to left ureter.



Fig. 5. Postoperative film showing entire removal of left half of pelvis.

On Feb. 20, 1947, a left hemipelvectomy was performed under general intratracheal anesthesia. The patient received six pints of whole blood during the operative procedure and one pint following surgery. The lesion had not extended to involve any of the pelvic parietes or urinary tract.

Postoperative intravenous pyelograms revealed normal function from both kidneys and no obstruction or distortion of the left ureter (fig. 6).



Figs. 6 and 7. Showing lateral and medial views of tumor of the left ilium.

The postoperative x-rays of the pelvis revealed a complete removal of the left innominate bone from the symphysis pubis back through the left sacroiliac joint. The soft tissue of the stump area revealed no evidence of tumor mass (fig. 7).

The examination of the gross specimen (figs. 8, 9) after disarticulation revealed the muscles surrounding the wing of the ilium to be pale in color, edematous, and to contain gritty, hard, direct extensions of the neoplastic mass involving the ilium.

The main tumor mass involved the entire wing of the ilium and was expansive, measuring 13 cms. in diameter. It did not appear to involve the ischium or the ramus of the os pubis. The greatest expansion of the mass was externally on the wing, and here was a large dome-shaped mass measuring 12 x 15 cms. The cortex covering this mass was paper thin.

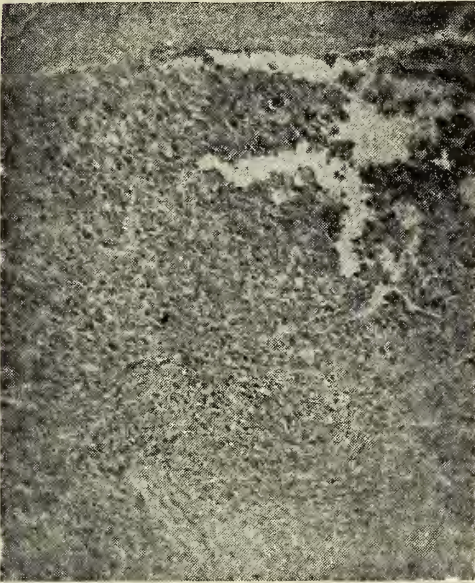
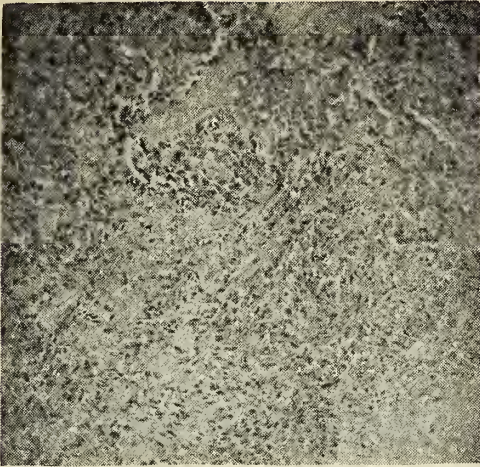
There was another rather soft mass in the region of the sciatic notch which bulged internally and measured approximately 2 x 1.5 cms. On cross-section there were large, clear, cartilaginous foci measuring up to 4 mm. in diameter; cystic spaces, some of which were filled with blood; areas of softening and necrosis and an irregular network of bone spicules.

Microscopic Examination (figs. 10, 11):

The sections presented an extremely diverse histologic pattern. Portions were seen in which irregular, poorly formed spicules of bone were being laid down by extremely active osteoblasts. In these areas osteoblastic activity was marked. The stroma in these areas appeared rather myxomatous.

In other areas there was a large, extremely cellular mass of wildly growing, deeply stained hyperchromatic cells arranged in no specific pattern. The individual cells were very large and irregular and possessed a large amount of basophilic cytoplasm. The nuclei varied markedly in size, shape and staining capacity. Most of them were huge, oval to round, and contained two or more nucleoli. Areas of hemorrhages were seen. Tumor cells were seen free within the vascular lumina. The pathologic diagnosis was osteogenic sarcoma.

The drainage from the wound was serosanguinous in character and was moderate in amount during the first five days. The drains were removed at the end of six days and the wound healed by primary intention except for drainage at both ends. The patient was ambulated on the tenth postoperative day. His activities have gradually been increased (figs. 2, 3). There was no evidence of necrosis of the skin flaps. The wound area was supported by an Ace bandage dressing.



Figs. 8 and 9. Microphotographs of tumor showing marked cellular activity and bony spicule formation.

At the present time there is no evidence of local residual tumor or demonstrable distant metastasis.

Comment:

The end results of this procedure will be improved when surgeons acquaint themselves with the fact that the operation can be undertaken with relative safety and that the operative mortality is now 14 per cent.^{5, 9, 13}

This figure can be lowered by the institution of good preoperative, operative and postoperative methods to combat shock. A complete knowledge of the anatomy involved coupled with good basic surgical principles will carry the well grounded surgeon through such a procedure.

In this way more patients will be offered a chance for cure, especially in certain type malig-

nancies, which they now are denied by conservative measures.

The benign tumors such as neurofibromas, benign giant cell tumors, giant osteochondromas, and chondromas offer the best prognosis. The chondrosarcomas^{9, 13} offer the most favorable prognosis for the malignant bone tumors. Less favorable in prognosis are the well differentiated soft tissue sarcomas.^{9, 13, 6}

The osteolytic osteogenic sarcomas and very undifferentiated soft tissue sarcomas should have the benefit of this operation; although the possible cures are lowest among the entire group.^{6, 9, 13}

Ewing's sarcomas, plasma cell myelomas, and metastatic tumors should not, except under unusual circumstances, be subjected to this operation.^{9, 13}

Summary:

Since the first successful operation by Girard fifty-three years ago, 132 cases have been reported. A mortality of 60 per cent was reported in the first 79 cases. In the past eleven years the operative mortality has dropped to 14 per cent. The over-all mortality was 36 per cent.

This drop in mortality has been due to the development of methods of combating shock and hemorrhage, and the present mortality can be expected to drop lower by a better understanding of the anatomy involved, the technics developed and the institution of active steps to prevent shock by free use of whole blood and plasma transfusions.

The follow-up statistics have been unsatisfactory to date. However, of the 45 patients who



Fig. 10. Photograph taken sixteen days after operation.

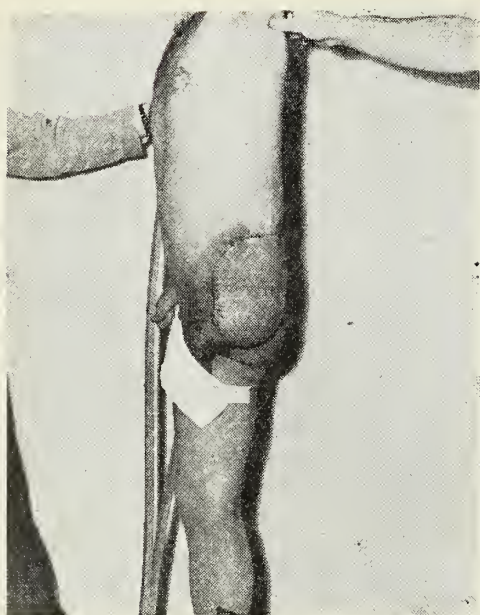


Fig. 11. Photograph taken sixteen days after operation.

survived the operation and who were followed for five or more years, 21 remained clinically well and 24 died of their disease.

This radical amputation seems a definite and distinct advancement in the radical treatment of selected cases of malignant tumors of the lower extremity, buttock, groin, innominate bone or pelvic parietes. By careful consideration of these factors in the future, the prognosis of such lesions can be favorably influenced.

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PRELIMINARY REPORT ON TRANS-VAGINAL X-RAY TREATMENT OF CARCINOMA OF THE CERVIX*

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Treatment of carcinoma of the cervix uteri by means of x-rays directed into the vagina was first carried out by Merritt² in 1920. Until the advent of shock-proof equipment, however, such a procedure was both cumbersome and hazardous. Merritt and Erskine¹ in this country and Martius³ and Witte⁴ in Germany have been pioneers in this field. Though many diverse and ingenious methods of application have been advanced by them, the literature contains few statistics in which this method was compared with a control group. This paper is based upon such a series.

The obvious advantage of transvaginal roentgen irradiation is that a lethal or near lethal tumor dose can be delivered to the parametric tissue without, at the same time, applying a destructive and necrotizing dose to the cervix itself as is frequently the case when radium is employed.

Transvaginal x-ray therapy was first used at the University Hospitals in November, 1939. In an effort to evaluate the method, it was agreed in conference with the Department of Gynecology that roughly alternate cases would be treated with radium and the others with transvaginal x-ray. Cases considered by the Department of Radiology as unsatisfactory for this type of treatment were referred back for radium therapy. From that date until the end of 1943, some 108 cases were treated with transvaginal therapy. Sixteen of these cases had had previous treatment, were also treated with radium or did not complete treatment for one reason or another. They are, therefore, not included in this series. Thus, there are 92 cases which have been followed for three years or more. This report is an attempt to evaluate comparative "survival rates" which would change only slightly whether based on three or five year results.

Data

During the period under consideration, 322 cases of carcinoma of the cervix were treated in this department. Of this number, 92 were treated by external radiation and transvaginal x-radiation alone while 230 cases were treated by other methods, chiefly a combination of x-ray and radium. Follow-up reports have been obtained in 98 per cent of these cases. Clinical classification was based upon the Schmitz grouping. Since this has been done by many different individuals over a period of three years, certain personal variations have necessarily occurred. All cases have been

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completely reviewed, and those which seemed incorrectly classified have been reclassified by the author according to his best judgment.

A significant number of cases have died of intercurrent disease, some with no evidence of carcinoma at the time of postmortem examination. These have been included and classed as deaths, and while they will thus somewhat lower the actual survival rate they should have no effect upon the comparison of the two groups. The high percentage of group IV cases treated by transvaginal radiation would lead one to suspect that in the early part of this series only the more advanced cases were given this type of treatment.

In computing complications in the transvaginal cases, all recorded complaints were considered. The fact that only one colostomy and one ureteros-tomy was performed, that none of the fistulae was repaired and that in the great majority of cases the conditions cleared spontaneously would indicate that at least some were of a minor character. This is further emphasized by the lower percentage of urinary frequency, bleeding and diarrhea in the group IV patients where other and more serious difficulties occupied the patient's attention. One case is recorded which may be considered as a radiation death, that of a necrosis of the small bowel due to an endarteritis in the involved area. A colostomy was performed upon another patient with a rectal mass that may have been due to radiation. Biopsy showed only inflammatory tissue and the patient was still alive and free of disease two and a half years later. The ureteros-tomy was performed upon a patient having hydro-nephrosis and vesical involvement at the time of treatment and cannot fairly be attributed to the radiation. All fistulae, both rectal and vesical, occurred in patients with neoplastic involvement of the vaginal septum and were due either to a progression of the growth or a regression with perforation of the septum following radiation. The ulceration and late changes of the external genitals were perhaps due to some fault in technic, for such reactions have been almost completely eliminated in recent years by more careful shielding of these parts.

Method

When transvaginal therapy was first inaugurated here it was given with 120 KV., 29 cm. distance, using a special shock-proof head that was adapted to different size Ferguson, hard rubber specula. Since October, 1940, all such therapy has been given with 200 KV., 0.5 mm. Cu. filtration with a HVL of 0.9 mm. Cu. at 26.5 or 27.0 cm. TSD, using Ferguson specula of either three or 3.8 cm. internal diameter.

Several different types of head and specula have been tried, but none have proved entirely satisfactory. Some of the most frequently encountered difficulties of application have been: (a) atresia of the vagina, either senile or due to invasion of the tumor, making insertion of the speculum very painful and at times necessitating use of a smaller one than seemed adequate; (b) lack of direct vision so that once the tube head is connected to the speculum no change in its position due to movement of the patient can be corrected; that this may be no inconsiderable factor in some of the complications has been demonstrated by checking position at start and finish of treatment and noting the change of position that has occurred; (c) lack of a completely satisfactory type of speculum in spite of the many models proposed, especially those of Erskine.¹ Other models which we hope will eliminate some of these difficulties are in the process of construction at the present time.

Analysis

Table I gives the number and percentage of patients in each group treated by transvaginal radiation and other methods, classified according to the grouping of Schmitz.

TABLE I
PATIENTS TREATED

Group	Transvaginal				Other Methods			
	I	II	III	IV	I	II	III	IV
No. of Cases.....	0	6	50	36	14	39	137	40
Per Cent of Cases. —		6.5	54.3	29.2	6	17	60	17

It is at once apparent that relatively more of the group IV cases were treated transvaginally than by other methods. It seems fair to assume, therefore, that early in the series there was a tendency to treat the advanced and often hopeless cases by this new type of therapy.

Table II gives the survival rate by groups of the two methods.

TABLE II
THREE YEAR SURVIVAL RATE

Group	Transvaginal				Other Methods			
	I	II	III	IV	I	II	III	IV
Cases Surviving ...	0	3	18	7	13	23	60	3
Per Cent Surviving. —		50	36	19.4	92.8	59	47.3	7.9

No cases in group I were treated transvaginally so that no comparison of that group can be made.

Group II cases were too few—6 by transvaginal therapy and 39 by other methods—to warrant conclusions. Of the 3 patients treated transvaginally who died, 1 died of a cerebral accident not associated with malignancy; 1 died following operation for intestinal obstruction and showed no sign of carcinoma or radiation changes at the time of operation; and the third was one of the cases that was untraceable though in good health when last heard from.

In group III there seems to be a significantly higher survival rate among those treated with other methods, chiefly radium and external radiation.

From the table, transvaginal therapy seems to be the method of choice in those patients falling into group IV. When it is remembered that Table I shows that more of the advanced cases were treated by this method, this fact becomes more significant. Consideration of the basic difference in the methods of treatment leads us to expect this slight advantage of transvaginal therapy over other forms in the more advanced lesions. The admitted limitations of treatment with radium are the lack of an adequate parametrial dose and the unequal distribution of the dosage over a rather restricted area. It seems logical then to expect the greatest advantage of transvaginal therapy to be apparent in the more advanced cases that cannot be adequately reached with radium but in which much higher dosage can be delivered over a wider field with transvaginal therapy.

Complications from the transvaginally treated cases only are listed in Table III.

TABLE III
COMPLICATIONS

	Group III Cases	Group IV Cases
BOWEL		
Bleeding	9	4
Diarrhea	9	3
Mass	2	2
Stricture	2	0
Fistula	4	1
GENITO-URINARY		
Frequency	8	0
Fistula	0	1
Obstructed Ureter	1	3
EXTERNAL GENITALS		
Exfoliation	2	2
Ulcer	9	7
Atrophy	2	2
VAGINA		
Vaginitis	0	1

While this seems a high percentage of complications, it must be remembered that only one death can be attributed to radiation and in only two other cases were the symptoms severe enough or persistent enough to require colostomy or ureterosomy.

The difference in percentage of complications in group III and group IV can be explained on the tendency of the patient to complain of the most pressing symptoms, often to the exclusion of others, and to the fact that many of the group IV cases were so far advanced that they expired before some of the later complications could develop. In complications of the external genitals which were due entirely to x-ray and appeared fairly early, the percentage in the two groups are within the limits of chance.

Summary

1. A series of cases treated by transvaginal roentgen radiation is compared with the survival

rate of another series of cases treated during the same period by other methods.

2. Transvaginal therapy shows a slight superiority over other methods in the treatment of advanced cases of carcinoma of the cervix uteri.

3. Complications from this method of treatment are fairly high but of a minor nature and have largely been eliminated by improvement of technic.

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ADHESIVE ARACHNOIDITIS FOLLOWING THE INTRATHECAL ADMINISTRATION OF PENICILLIN*

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In 1943 Rammelkamp and Keffer¹ demonstrated that penicillin does not pass through the blood-brain barrier in significant quantities following an intravenous injection of the substance. Because of this fact and because of the few apparent toxic reactions produced by its intrathecal injection, penicillin soon was being widely used in the treatment of all types of purulent meningitis. Penicillin was introduced into the ventricular system by injection by McCune and Evans² in a case of Staphylococcic meningitis with the complete recovery of the patient.

As early as August, 1944, Rosenberg and Arling³ called specific attention to the reactions produced by large doses of penicillin injected into the sub-arachnoid space. Then came the report by Sweet and his co-workers⁴ of two instances of mild and two of severe sacral radiculitis following intrathecal injection of penicillin in 16 patients with pneumococcic meningitis. All these patients recovered.

To these reports have been added a group of papers by Walker and his co-workers^{5, 6, 7, 8} which describe the clinical and physiologic effects of introducing penicillin into the ventricles of humans and into and around the brain in animals. These workers concluded that in high concentrations penicillin may produce convulsions and focal damage to the central nervous system but that it may be applied to nerve tissue without toxic effects in doses well above an adequate antibiotic concentration.

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Recently Morginson⁹ summarized the toxic reactions accompanying penicillin therapy. Among those tabulated as following the intrathecal administration of the drug were headache, vomiting, vascular collapse, cyanosis, flaccid paralysis of the extremities, convulsions, unconsciousness and increased spinal fluid cell count and protein values.

The following cases illustrate an additional toxic effect of penicillin when injected intrathecally in large amounts.

Case I

J. L., a 56 year old white man was admitted to his local hospital on Jan. 16, 1946, in a restless comatose state. The history revealed that he had been well until the afternoon of Jan. 15, 1946, when he complained of weakness in the knees. At 2:30 of that day he had a severe generalized chill and complained of aching of his entire body. On the morning of Jan. 16 he had a severe headache, vomited, and gradually became delirious.

Physical examination on admission to the local hospital showed the temperature to be 102.6 F., the neck severely stiff, and a Kernig test which was bilaterally positive.

The abnormal laboratory findings were: white blood count, 15,300; spinal fluid cell count, 13,212 polymorphonuclear leukocytes. A Gram's stain of a smear of the spinal fluid showed numerous gram-negative diplococci, both intra and extra-cellular. A culture of the spinal fluid showed meningococci.

One hundred thousand units of penicillin were administered intrathecally. No record of subsequent medication was available.

The patient improved rapidly and returned to a normal mental state 48 hours after the medication was started. Urinary retention developed which required catheterization for three weeks and the patient complained of aching in both calves which was still present at the time of his discharge from the hospital on Feb. 11, 1946.

On March 29, 1946, the patient was admitted to the University Hospitals complaining of urinary frequency and occasional incontinence. He stated that his legs were weak and did not "track right."

Physical examination was negative except for a blood pressure reading of 150/100, weakness of the lower extremities, more severe proximally and on the left, knee jerks 3+/0, Achilles' jerks 1+/2+, plantar extensor response on the right and occasionally on the left, mild impairment of pain perception on the left lower extremity as high as the inguinal ligament including the sacral dermatomes on the left, and a rectal sphincter tone of 80 per cent.

Examination of the urine was negative. The

blood counts were within normal limits and the blood smear showed nothing unusual. Kolmer, Kahn and Kline tests of the blood were negative for evidence of syphilis. The spinal fluid was clear and colorless. It contained two cells and a total protein of 81 mgm. per cent. The Kolmer test was negative. The initial pressure was 50 mm. of water and there was no rise in the pressure during unilateral or bilateral compression of the neck veins. Abdominal compression and release of compression produced a rapid rise and fall of the spinal fluid pressure.

- Roentgenograms of the dorsal spine and lumbar spine were reported as showing hypertrophic arthritis but no other evidence of bony disease or injury.

A diagnosis of adhesive spinal arachnoiditis was made. The patient left the hospital agreeing to return at a later date for re-examination.

On May 1, 1946, he was seen again at University Hospitals. He reported that the strength of his legs was improving and that his bladder control was good. Examination revealed moderate improvement in the strength of the legs, knee jerks 3+/1+, Achilles' jerks 1+/1+, bilateral extensor response on plantar stimulation, improved pain perception in the lower extremities with slight impairment on the anterior surface of the left thigh and leg, rectal sphincter tone 80 per cent and a moderately spastic gait. The routine laboratory examination of the urine and blood showed nothing unusual. The spinal fluid was not examined.

The patient was seen in the hospital again on Aug. 16, 1946, at which time he stated that his legs were stronger and that he was able to do moderately heavy work. The bladder control was normal. Examination showed normal strength in both legs while the remainder of the findings were unchanged. The spinal fluid was not examined.

The final diagnosis was adhesive spinal arachnoiditis, improving.

Case II

L. V., a 19 year old white man was admitted to University Hospitals on Oct. 17, 1945, and the following history was obtained, which was later verified through official channels.

On Jan. 29, 1945, while in the armed forces, the patient first complained of headache and malaise. He retired early and on the morning of Jan. 30, was found unconscious in his bed. Physical examination revealed a temperature of 105 F., a stiff neck, and a positive Kernig sign bilaterally. The spinal fluid contained 10,000 cells, mostly polymorphonuclear leukocytes, and was under a pressure of 210 mm. of water. Culture of the fluid showed large numbers of meningococci.

On that day 300,000 units of penicillin dissolved in 15 cc. of physiologic salt solution was injected intrathecally and on Jan. 31 another injection of the same amount of penicillin was administered. Penicillin was injected intramuscularly in unknown quantities for an unknown period of time.

The patient regained consciousness in four days' time and felt well except for numbness of the feet and aching in the calves of the legs.

Between Feb. 15, 1945, and the date of admission to University Hospitals (Oct. 17, 1945) there was gradual ascending loss of sensation to a skin line through the nipples, loss of use of the legs with increasing spasticity, and loss of bowel and bladder control.

The abnormal findings on physical examination included a spastic paraplegia with loss of voluntary motor power of the legs, absence of all modalities of sensation as high as the fourth dorsal spinal cord segment, absence of rectal tone, and loss of bladder control.

A clinical diagnosis of chronic adhesive arachnoiditis was made.

The urine examination, blood counts and smear showed nothing unusual. Kolmer, Kline and Kahn tests of the blood were negative. Several attempts at lumbar spinal puncture were unsuccessful. Cerebrospinal fluid removed by means of cisternal puncture was clear, contained two cells per cubic millimeter, a total protein of 13 mgm. per cent, and was under a pressure of 150 mm. of water. A Kolmer test done on this fluid was negative for syphilis.

Roentgenograms of the dorsal spine and lumbar spine showed no evidence of bony disease or injury. A film of the upper dorsal spine following the instillation of lipiodol into the cisterna showed only a few droplets passing down as far as the upper border of the third dorsal vertebra.

Laminectomy from the first dorsal vertebra to the eighth dorsal vertebra showed that the subarachnoid space was obliterated from the first dorsal vertebra to the seventh dorsal vertebra by fibrous tissue. In the lowermost portion of the exposure the subarachnoid space was partially patent. The dura mater and arachnoid membrane were dissected from the spinal cord which appeared to be normal in size. The vessels over the surface of the spinal cord appeared patent. A portion of the adherent dura mater and arachnoid were removed for biopsy and culture and the wound was closed, the dura mater being left open.

The department of pathology reported that the segment of dura mater showed areas of focal acute cellulitis and arteritis, and the culture of the material removed was negative for pathogenic organisms.

The postoperative course of the patient in the hospital was uneventful, but very little if any improvement was noted. The patient was discharged from the hospital on Nov. 21, 1945.

On Jan. 25, 1946, the patient was again admitted to the hospital. There had been no change in the ability to control the legs, detect sensation, or control the bowel and bladder. Because of bladder infection the patient was transferred to the Department of Urology. On Mar. 13, 1946, a suprapubic cystostomy was done with a satisfactory result being obtained. The patient again left the hospital on Mar. 28, 1946. Physical examination at that time showed no essential change when compared with the abnormal findings of previous examinations.

Discussion

In a compilation of over 2,000 cases reported by a series of authors^{10, 11, 12, 13, 14, 15} in a study of the sequelae produced by meningococcic meningitis no patient had a history, physical abnormalities or laboratory findings indicative of the presence of adhesive arachnoiditis. This evidence together with the fact that the sequelae from meningococcic meningitis ordinarily develop at the time of the acute infection make it likely that the neurologic syndromes described in our patients were not sequelae of the bacterial invasion.

The surgical treatment of adhesive arachnoiditis is relatively ineffective unless the adhesive bands are limited to a small area of the spinal cord. Surgical exploration was done in Case II to establish the diagnosis and to give the patient every chance to obtain even minimal improvement. Because of the mildness of the findings in Case I, operation was delayed and this decision was ultimately rewarded by the gradual improvement of the patient's complaints and physical findings.

In spite of the toxic effects reported from the intrathecal injection of large doses of penicillin, it should be noted that there have been no published instances in which a dose of 10,000 units of the drug injected into the subarachnoid space twice daily produced any permanent damage. The authors feel that in the treatment of meningitis due to the streptococcus, staphylococcus, pneumococcus, or in severe cases of meningococcic meningitis, penicillin, if the physician elects to use it, should be administered intrathecally in a dose of 10,000 units twice a day. Larger amounts of the drug may produce symptoms of either a transient or permanent nature.

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THE USE OF CAUDAL ANESTHESIA IN OBSTETRICS

David Wall, M.D., Ames

In 1944 the writer reported on the use of continuous caudal anesthesia in 100 obstetric cases.¹ Following this report he continued to use this method of anesthesia in selected cases until induction into the army.

On returning from service, two obstetric problems claimed particular attention: (1) reconsideration and reevaluation of the place of caudal anesthesia in private obstetric practice, and (2) early ambulation following delivery. This report embodies observations, results and conclusions on these two points based on a series of 200 consecutive patients cared for in the six months period beginning January, 1946, and ending July, 1946.

Of these 200 patients, 101 were selected for caudal anesthesia. The remaining 99 were delivered with other methods of analgesia, usually a barbiturate and paraldehyde. In his preceding report the author has outlined his criteria for selecting cases for caudal anesthesia. These criteria plus additions which have been found valuable may be summarized as follows:

(1) The patient must not be exceedingly obese, must have a palpable caudal notch, and no discernible sacral abnormalities which would offer technical difficulties in the introduction of the needle.

(2) There should be no apparent disparity between the size of the baby and the pelvis. If the pelvic measurements are questionable, caudal anesthesia is not used.

(3) The patient should be in active labor, having normal uterine contractions at intervals of five minutes or less. The cervix should show approximately three fingers dilatation and the head descending normally.

(4) If there is a frank breech presentation, the presenting part is difficult to grasp safely and delivery is facilitated if the patient can use the muscles of the abdomen for expulsion. In such cases caudal anesthesia is not advisable.

(5) If an internal version is contemplated, caudal anesthesia should not be used, as a relaxed uterus is necessary for version and this is not secured with caudal anesthesia.

(6) There must be no history of sensitivity to local anesthetic drugs.

(7) There is a final and somewhat intangible criterion involving chiefly obstetric judgment. The writer has found it is poor practice to continue a caudal anesthesia for more than four hours. If continued longer the patient becomes restless, loses motor function of the legs and tends to slip easily into mild shock. Therefore, before starting caudal in a given patient, it is always advisable to form an opinion regarding the probable duration of labor. Will this patient deliver in two or three hours? If not, she will be better off with some other form of sedation and analgesia.

The technic of caudal anesthesia used by the author was described in his previous report¹ and will not be repeated in detail here. Three grains of a rapidly acting barbiturate are given before anesthesia is instituted. This accomplishes two purposes: first, it gives sufficient sedation usually to carry the patient to about three fingers dilatation; and second, it has been found to increase tolerance of local anesthetic. After the caudal has been started the patient's blood pressure is checked regularly. Hypotension is a common development and if present, the patient is given ephedrine sulphate gr. $\frac{3}{8}$ to $\frac{3}{4}$.

The most serious objection to caudal anesthesia is that 20 cc. of any 1½ per cent local anesthetic is a potentially lethal dose if introduced into the subdural space. Should the needle puncture the dura and should the obstetrician fail to recognize the situation and administer a full 20 cc. of solution, a massive spinal anesthesia will result. In such a contingency spinal puncture would have to be done to drain off as much solution as possible; oxygen and artificial respiration administered and other emergency measures used. Anyone using caudals should be prepared for such an emergency.

The best safeguards against massive subdural injections are careful aspiration for possible spinal fluid after the needle is introduced and initial injection of a trial dose of 5 to 8 cc. of solution.

The writer was starting a caudal on a patient selected for the procedure. Aspiration after insertion of the needle produced spinal fluid. As the patient's labor was progressing rapidly and she was in considerable distress, 5 cc. of 1½ per cent metycaine in Ringers solution were injected slowly and the needle was withdrawn. The patient obtained pain relief in five minutes and anesthesia to the level of the zyphoid process which lasted one hour and forty-five minutes, during which time she was easily delivered by low forceps with an episiotomy which was repaired. However, think what the results would have been had 20 or 30 cc. of metycaine been injected into the subdural space. This emphasizes the fact that careful aspiration and an initial small dose are musts.

In this series of 97 caudal anesthetics there were no serious complications. There were no disagreeable after effects such as headache and leg pains. There were no deleterious effects on the babies. Where difficult forcep deliveries or extensive perineal repairs were necessary, these were done more easily under caudal than under any other form of anesthesia.

Early ambulation of obstetric patients is the second subject of this report. Most modern surgeons approve early ambulation of surgical patients, and the writer had the opportunity to observe the benefits of early ambulation of surgical patients in the army. There has been recent publication of reports on a large series of obstetric patients who were allowed to leave their beds in 24 to 28 hours and were given early bathroom privileges with no unfavorable results.

As the patient census on the obstetric floor of the local hospital doubled and the number of nurses dropped and continued to drop, it was evident that something had to be done. Two possibilities presented themselves: (1) sending the patients home on the second or third day, or (2) getting the patient up on the first or second day and allowing bathroom privileges to reduce the work required of nurses. It was decided to employ early ambulation.

Patients were allowed to sit in a bedside chair in the first twenty-four hours and were given bathroom privileges in thirty-six hours. This eliminated a considerable percentage of time-consuming nursing and permitted a more profitable use of the nurses' time. The patients' reaction was surprisingly favorable. Multiparas particularly would comment on how much better they felt than they did after previous deliveries when they were kept flat in bed for periods up to ten days.

In this series, all patients were examined vaginally (sterile technic) before leaving the hospital

on the eighth or tenth day and examined again in six weeks. There was no wound separation in the perineum of patients who had had episiotomies. Most episiotomies appeared more completely healed than those on patients who had spent eight days in bed, and all were completely healed at the six weeks check. In the series there was no increase in postpartum bleeding; the only postpartum hemorrhage occurred in a patient in the first 24 hours before she was allowed to sit up. There were no cases of thrombophlebitis and few complained of backache—certainly no more than complained formerly when bedrest was enforced. The most noticeable change in care was the marked improvement in bowel and bladder function. Of the 200 patients only 10 required catheterization once, and only 3 twice—none more than twice. Only 20 patients required an enema once and 4 more than once. A nightly tablespoon of petrogalar was given to each patient, which seemed to be sufficient. No noticeable change in percentage of patients nursing their babies was noted.

On the 200 patients, 6 had a temperature of 101 F. for a morbidity rate of 3 per cent. Diagnoses of cause of temperature were 1 virus pneumonia, 3 mastitis, 1 endometritis, and 1 Vincent's angina. There were five cesarean sections, two of them done with caudal anesthesia and three with ethelene gas anesthesia. Indications for section were 2 40 year old women with toxemia, 1 previous section, 1 placenta previa with hemorrhage and 1 cornual pregnancy. There was 1 stillborn macerated fetus, etiology undetermined, and 1 neonatal death on the tenth day, diagnosed as status lymphaticus, among the 200 babies.

In conclusion, the author feels that continuous caudal anesthesia is a satisfactory method of pain relief for parturient women—applicable to approximately 50 per cent of a general obstetric practice. Continuous caudal anesthesia has definite advantages, disadvantages and even dangers, and its use should be confined to those obstetricians who understand its limitations and who are willing to observe their patients closely for its dangers.

Early ambulation of postdelivery patients as a routine procedure with a series of 200 patients proved successful from several standpoints, namely, patients' reaction, general obstetrical result and more profitable use of nurses' work hours.

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SPECIAL ARTICLE**THE DOCTOR'S ROLE IN THE
POSTWAR WORLD****Alfred W. Adson, M.D., Rochester, Minn.**

The training and experience of physicians qualifies them to understand the emotions and desires of the human being. This knowledge should impel physicians to take an active part in civic and national affairs in addition to performing their duties as doctors of medicine.

Wars are destructive and costly and leave in their wake grief, hunger, deprivation, fears and revenge. With such rampant emotions besieging mankind, it is obvious that local and national changes occur in our domestic economy. They even threaten our form of government as every man seeks security and peace.

During the war dictatorial powers were granted to officers of the government, but with the cessation of hostilities these powers were not readily relinquished. Many adjustments are necessary. Laws must be remade, industry needs reconversion, salaries require adjustment, war veterans have returned with their problems and scarce commodities need replenishment.

Politicians are at work recommending solutions for the iniquities that exist. Individuals who enjoyed dictatorial powers during the war believe that the nation would be served best during peace by continued regimentation. There are others who believe that it would be wise to substitute a foreign type of government for our own, such as the socialistic or communistic type wherein the individual becomes subservient to a national government. Fortunately, the majority of American citizens still believes in our democratic form of government, which was made by the people and for the people. With that prospect and hope in the future, adjustments will be made and doctors of medicine will assume their responsibilities.

What does the public expect from the medical profession? I am sure that the answer would be immediate relief when afflicted and protection against illness so that all can live long, useful lives. This means that every human being desires all the advantages offered by modern medical science and the privilege of a hospital bed in the event of illness.

Rarely does he consider the cost of physical equipment and the salaries of technicians, nurses, hospital attendants, and reasonable fees for professional services. No one knows when sickness or an accident will occur; therefore, the service must be in readiness at all times.

Too often the patient is embarrassed when presented with a statement for the services rendered, since he has no ready cash, failing to have provided a budget for illness. The situation is still worse when his income is insufficient to provide a reserve for that day when sickness does occur.

It is this group of patients who are seeking medical security and who are interested in buying protection on a monthly installment basis. They are also susceptible to the propaganda that the national government should provide a compulsory health insurance program. Such a program would entail another added tax burden. The proposal suggests a tax on the employee's salary as well as a tax on the employer. The employer has no other recourse than to pass the tax on to the consumer by increasing the price of the manufactured product. The result is that the employee is taxed twice for the proposed compulsory health insurance.

The individual's only other solution to secure medical security is to purchase protection on an installment basis. Insurance companies have offered this protection but at a rather high acquisition cost. The cost is often prohibitive for earners of low wages. Hospitals and doctors have attempted to solve this problem by creating non-profit organizations which render this service at a low cost on a monthly basis. The hospitals have united their efforts through the Blue Cross organization. Physicians and surgeons have developed a prepayment mutual plan which assures the individual and his family medical care whenever it is needed. Arrangements have been made for partial or total coverage. Partial coverage protects against catastrophic illness, the severe illness, non-occupational accidents, surgery and confinements. Naturally its cost is less than for complete coverage.

Recently, insurance companies have come to realize that they, too, can offer a similar low cost protection when cooperating with doctors who serve as advisors in working out plans for a particular group or community. The insurance companies have the additional advantage in that they are able to provide insurance for loss of time when one is ill and for disability as well as life insurance.

It is scarcely necessary to argue that hospital and medical care supplied on a voluntary, competitive basis will be superior to that offered by politically controlled bureaus in our national capital. Judging from our recent experiences with governmental expenses it is obvious that a federal compulsory health insurance program with bureaus, directors and supervisors cannot compare with the nonprofit service plans on a cost basis.

With the ever increasing knowledge of medical

science, the curriculum of medical schools will be lengthened rather than shortened. If the years of undergraduate study are not increased, graduate study will become more essential in adequately preparing doctors of medicine to render the highest type of professional service. It is also the duty of members of the medical profession to see that young students be encouraged to study medicine in order to supply doctors in sufficient numbers to protect the health of our people. It may be necessary for our state schools to offer more scholarships to worthy students who need financial assistance. It should also be the responsibility of our medical institutions to provide courses of graduate study for those who are in practice in order that they may familiarize themselves with and employ the new knowledge of medical science.

Much has been said about the shortage of rural doctors and the need for supplying them. The public itself is partly responsible for this. Good roads and automobiles encourage agricultural people to pass by the village and go to a town where the markets supply a wider service. While in town, it is only natural for them to call on the doctor if they need attention. They are probably impressed by his facilities and the hospital advantages. It is obvious that they should return to him when seriously ill because they can drive twenty miles with an automobile as quickly as they could drive five miles in the horse and buggy days. All this leaves the doctor in the village at a disadvantage. The income from his practice does not justify expensive equipment, nor is he able to finance a hospital. His social advantages are less than those in a town of 5,000 or 10,000 inhabitants. Consequently his family encourages him to move, which, too frequently, he does.

The situation may not be as serious as we are led to believe. The advantages of good roads, automobiles and ambulance service make it possible for doctors from towns of moderate size to make calls at some distance without too much loss of time.

It is granted that in some states there are sparsely settled areas that are in need of medical service. Where such a situation exists, governmental aid will be necessary to provide a health center with a small hospital. It may be necessary to supplement the doctor's income in order to encourage him to come to the community. The government aid should come first from the county. If this is not sufficient, state aid should be supplied. Federal aid should not be called upon unless it is absolutely necessary, and such support should take the form of grants in aid, matched by state and county funds. The management should be controlled locally, to secure and maintain the local

interest of the community, to prevent waste of funds and also to assure loyal support for the community's own enterprise.

In rendering medical service, doctors of medicine encounter three groups. The first group is composed of those who are financially able to secure the medical service needed and those who are provident enough to provide a budget for illness, or who carry hospital and medical protection in the form of insurance or coverage in a hospital or medical prepayment plan. Members of this group are assured of all the advantages of modern medicine.

In the second group are those individuals who live on a marginal income. They spend all their income each month. Some of them live in comfort; others with large families barely exist. A sudden serious illness becomes a calamity to members of this group. They will either neglect themselves or leave their accounts unpaid. They dislike charity, have no credit and are unable to secure assistance from welfare agencies because they are not on the charity list. Most of these people are self-respecting and are desirous of paying their way. Since the Federal government has seen it advisable to rehabilitate industries by loans and agriculture by subsidies, it would appear reasonable that it could provide a loan fund matched by states, operated by the present welfare agencies of social security. The means test should be utilized and supervised by local citizens to avoid abuses. In unusually worthy instances, grants may be made or hospital and medical insurance provided. I am aware that the present laws do not permit of such procedure, but perhaps our laws should be modernized to meet the social needs.

The third group includes those whose medical service is partly or wholly paid for by tax funds. We all agree that the social security laws have provided aid to worthy persons. Federal bureaucratic control without allowance of sufficient latitude in the locality where the individual problems are thoroughly understood not infrequently results in abuses or hardships.

Certain types of medical care for veterans need to be provided in veterans' hospitals. These types include the care of such patients as those with tuberculosis, the insane, and those who are invalids or permanently incapacitated. We also agree with the present method of procedure which permits the veteran to secure treatment for a service-connected disability from his own physician. The fact that the veteran can obtain his medical service at home permits him to stay with his family, continue with his occupation and remain a member of the local community rather than being looked on as a sick, old soldier in a veterans' hospital.

The service further decreases the necessity of additional construction of veterans' hospitals.

Doctors have a serious obligation in cooperating with the Veterans Administration in providing this medical service. It should be efficient; opinions rendered should not be biased, and fees for service should be reasonable. While doctors all believe that the veteran is fully entitled to medical treatment for service-connected disability, they should likewise see that he does not abuse the privilege with attempts to seek medical care for disabilities or for illnesses of a nonservice nature or to seek free professional care for his family when he is financially able to provide the same.

The state cases—epileptics, the feeble-minded, the insane and those in houses of correction—are too often looked on as custodial cases and medical attention is neglected. One of the reasons for this neglect is the inability to secure physicians to staff the institutions. Young doctors are unable to accept the positions since the salaries are so low that they cannot pay off school debts and assume the responsibilities of family life. In some institutions the doctor's salary is less than the salaries of cooks, painters and stonemasons. The situation needs correction if an honest effort is to be made at rehabilitation of those who are capable of being rehabilitated. The problem is economic and social. Who is more capable of enlightening the state legislature than we doctors? The responsibility is ours. Let us assume it!

The indigent sick not only need food, clothing, shelter, school advantages and recreation but medical attention as well. Their number can be reduced and the sick and injured improved or restored to health by an integrated program of welfare and medical service. The care of these unfortunate ones is a local problem and should be undertaken by those who fully understand the particular situations of the community. The cost of this responsibility should be borne jointly by the county, state and nation. Federal grants should be grants in aid to states which match the funds to be used for relief. Although federal supervision and accounting is necessary, it should be held to a minimum, permitting the state and the county welfare agencies to distribute the relief as need is determined by the means test. Let us discontinue the propaganda that makes it appear that any federal or state aid to a recipient is a patronage gift from the administration in power. The financial aid is only a partial return of the income taxes extracted from us all. Let us urge that our relief agencies in the national government and state be centralized to prevent duplication and waste of funds.

The public is rarely conscious of the fact that medical science is constantly at work protecting the health of a community. The federal and state departments of health have established laws and regulations concerning sanitation and prevention of contamination of food. They supervise quarantines to prevent the spread of disease. They provide vaccines, bacterins and serums for immunization. They conduct programs of health education. They utilize public health nurses to give practical demonstrations and assistance to the needy.

A department of public health is one of the integral parts of our county, state and federal governments. It needs the support of physicians. They should assist with its educational programs. However, during this period of dictatorial power, certain individuals have wanted more influence and have advocated the supervision of medical care such as the Emergency Maternity and Infant Care program. I am sure that departments of public health always will have the support of doctors as long as the departments confine their activities to prevention of disease and accidents.

In conclusion, I wish to re-emphasize that the future of medicine is what we make it. The opportunities are many. The field of medicine has widened. Group medicine will develop. The number of rural doctors will decrease. Specialists have become a necessity. Incomes will not be large. However, if the public demands the advantages of modern medicine, it will be necessary for it to provide sufficient incomes for physicians to live normal lives. It will have to produce adequate incomes for doctors in order to encourage students to spend arduous hours in training at great expense to be ready to take up the burden when we older men lay it down.

We physicians are American citizens and as such we have civic responsibilities. If chosen to serve on a committee or a welfare board, let us accept the appointment, let us help solve the problem when it arises and let it not be said of us that we hesitated to enlighten governmental representatives concerning the problems among their constituents.

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College of Medicine
State University of Iowa
CLINICOPATHOLOGIC
CONFERENCE

March 31, 1947

Summary of Clinical Record

A 6 year old white male child entered the University Hospitals on the Urological Service Jan. 18, 1947, complaining of frequency of urination and pain in the feet. Since birth, the parents had noticed that the child voided more than normally and wet the bed each night. He had never complained or been seen in distress while voiding. No abnormalities of the urine were ever noted. A diagnosis of enuresis had been made on previous examinations. No treatment was effective. During December, 1946, he complained of pain in his feet, and the toes became swollen and reddened. He did not eat well, lost weight, and did not go out of doors to play. The pain in the feet became more severe, and he was unable to wear shoes.

Physical examination revealed an underweight, dehydrated, cooperative male child. The temperature was 99.6 F. The pulse was 140 and respirations were 20 per minute. The head was normal. The chest was clear. The heart was normal in size and rhythm. A systolic murmur was audible, best heard over the base. The blood pressure was 110/60. The abdomen, genitalia, and rectum were normal. There was bluish-red discoloration of the toes. Some twitching of the hands was noted.

Laboratory examinations: Urinalysis: pH 5.5; specific gravity, 1.010; albumin, one plus; sugar, negative; chemical test for blood, negative; microscopically there were 15 to 20 white blood cells per high power field. The hemoglobin was 11.0 grams per 100 cc. The erythrocyte count was 4.15 millions per cu. mm., and the leukocyte count was 21,000. The blood sugar was 117 mg. per 100 cc. The blood urea nitrogen was 195.0 and the creatinine was 8.0 mg. per 100 cc. The CO₂ combining power of the blood was 12 volumes per 100 cc.

X-ray examination: A chest film was normal. A flat film of the abdomen showed several calcium densities in both upper abdominal quadrants.

The patient remained quietly in bed, drank fluids without distress, and maintained a nearly

normal temperature. On the third hospital day, under general anesthesia, cystoscopy was performed. The bladder was normal. Both ureteral orifices were normal. The left ureter was catheterized easily. No residual urine was found in the pelvis. A left retrograde pyelogram revealed a normal pelvic outline. The following day the patient appeared weaker and gradually lapsed into coma. Respirations became rapid and finally ceased on the fifth hospital day.

Clinical Discussion

Dr. R. H. Flocks (Urology): This patient presented several very interesting problems in diagnosis and treatment. The high blood urea nitrogen and creatinine, the low CO₂ combining power of the blood, the serum calcium of 9.4 mgm. per cent with serum phosphorus of 7.2, and serum phosphatase of 10.3 units, were all findings typical of renal insufficiency.

As may be seen in the x-ray film of the abdomen, there was very extensive calcium deposition throughout both kidneys which was present only in the calices and pyramids and not in the renal pelvis proper. It was this plus an associated renal infection which evidently caused the extreme renal insufficiency. Such an extensive bilateral renal calculosis is called nephrocalcinosis. In the human, only calcium phosphate nephrocalcinosis has been seen, but in animals, oxamide and calcium oxalate nephrocalcinosis are readily produced by diets high in oxalate and deficient in magnesium and vitamins A and D. Therefore, a diagnosis of nephrocalcinosis of the calcium phosphate type was made.

There are two kinds of nephrocalcinosis. One is the infectious type in which widespread renal infection occurs. It is usually due to an urea-splitting organism which produces areas of renal damage upon which the calcium phosphate precipitates. These regions then form the nuclei for further growth of the stones which gradually destroy more and more renal substance by a combination of pressure and associated infection. The second kind of calcium phosphate nephrocalcinosis is the hyperexcretory type. Here, the original precipitations in the tubules are due to the vast amount of salt which is excreted. These original precipitations then produce further difficulty by pressure upon the adjacent renal substance and are followed by infection.

In most instances urinary hyperexcretory states involving calcium and phosphorus are associated with hyperparathyroidism and bone disease. There was no evidence of the presence of either of

these two conditions in this patient; there was no osteoporosis, and there were no changes in the blood suggesting hyperparathyroidism. Therefore, our final clinical diagnosis was renal insufficiency due to nephrocalcinosis of the infectious type. The stones on analysis in this case should have been composed of calcium phosphate.



Fig. 1. X-ray film showing extensive calcification of both kidneys.

extensive change in the pelvis and ureters from an associated tuberculous infection. This was absent in this patient. Therefore, renal tuberculosis was ruled out.

Renal tuberculosis may produce extensive renal calcification; this is flaky in character and does not give discrete stone-like shadows in the x-ray film as were seen here. Usually there is also

The treatment of this patient was doomed to failure because of the very extensive renal damage which was present when we first saw him. Ordinarily, correction of the cause of the nephrocalcinosis results in arrest of the disease. Only palliative measures to correct the disturbances caused by the renal insufficiency, and the administration of antibiotics for the treatment of the renal infection were possible. It was impossible by surgical means to remove the stones from the renal substance.

Dr. C. L. Gillies (Radiology): The calcification was not confined to the calices but involved the renal papillae and tubules.

Summary of Necropsy Findings

Dr. E. D. Warner (Pathology): The renal calices were greatly dilated, globular in shape, and filled with tightly packed, grayish-white stones. In some places these concretions were solid, but in others they could be broken by finger pressure. The stones were shown by chemical analysis to be composed of calcium oxalate. Removing the stones left the lining of the calices shaggy in appearance, and small projections of calcified material could be seen in the collecting tubules of the papillae. However, the mucous membrane of the

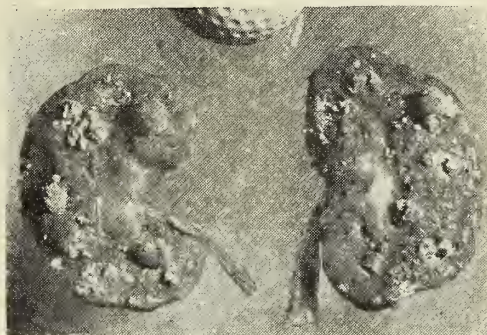


Fig. 2. Hemisection of kidneys showing extensive nephrocalcinosis.

pelvis and calices was intact. No stones were found in the renal pelvis or ureters, but there were many small concretions within the bladder. Grossly, the renal parenchyma showed no areas of calcification, but microscopically the lumen of almost every tubule was seen to be filled with crystalline material. Some of these intrarenal concretions stained with hematoxylin like the calcium seen in degenerative processes. However, most of them could be seen only with polarized light. A few tubules showed calcification of the epithelium but most did not. The renal substance was little damaged except in foci where there was atrophy of parenchyma, fibrosis, and lymphocytic infiltration. The glomeruli and tubules in these areas were in all stages of atrophy and hyalinization. There was little acute inflammatory response to the presence of the stones. A few cortical petechiae were noted grossly. The kidneys were essentially normal in weight. The parathyroid glands were enlarged and showed hyperplasia microscopically. Other endocrine glands were normal anatomically. The gastrointestinal tract contained much old blood, but no bleeding point could be found.

Incidental findings: The left testicle was in the inguinal canal. It showed no evidence of atrophy. The verumontanum was somewhat enlarged and

hyperemic. None of the bones examined showed cysts, osteitis, or other recognizable lesions.

Necropsy Diagnoses

Nephrolithiasis (calcium oxalate) with renal atrophy, bilateral.

Chronic hyperplastic lymphadenitis; in hilar nodes, kidney.

Hyperplasia, parathyroid glands, secondary.

Azotemia, severe.

Chronic cystitis, mild.

Occult blood, gastrointestinal tract.

Accessory spleen, gastrolial ligament.

Undescended left testicle.

Clinical Discussion

Dr. Flocks: The result of the chemical analysis of the renal stones is very surprising. Although approximately 40 per cent of all urinary calculi in humans are made up of calcium oxalate, to my

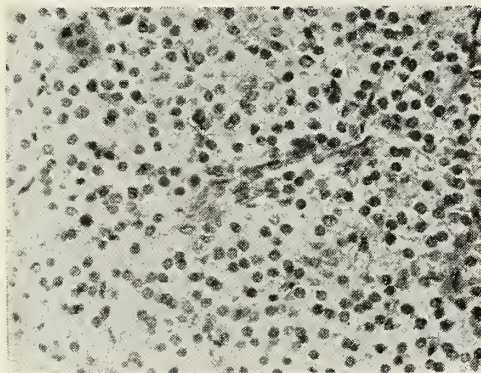


Fig. 3. Photomicrograph of a parathyroid gland showing hyperplasia.

knowledge no case of pure calcium oxalate nephrocalcinosis has been described in the human being. Certainly, this is the first such case seen in the University Hospitals. As has been emphasized by Greta Hammarsten,¹ Herkel and Koch,² and others, calcium oxalate nephrocalcinosis and urinary hyperexcretory states involving oxalate can be produced in animals by one or a combination of the following: (1) diets high in carbohydrates; (2) diets high in substances which contain much oxalate, such as spinach, rhubarb or chocolate; (3) diets deficient in magnesium, and vitamins A and D; (4) injection of epinephrin (temporary); and (5) low protein diet, which causes a lowering of the solubility of the oxalate in the urine.

In the human, such measures may produce hyperexcretion of oxalate in the urine, but no nephrocalcinosis has occurred. In retrospect, it would be extremely interesting to know in detail

more about the diet of this patient. It may be that an extensive renal infection occurring during a period of massive hyperexcretion of oxalate resulted in a nephrocalcinosis of the oxalate rather than of the phosphate type. This in turn produced renal damage of itself and produced an associated infection with exacerbation of the pre-existing renal damage, renal insufficiency and death.

Dr. Genevieve Stearns (Pediatrics): This child was seen by a pediatric consultant for advice as to the desirability of alkali therapy. The acidosis was extremely severe, the CO₂ combining power only 12 volumes per cent. This degree of acidosis is due to severe base deficit, far beyond the power of the body to compensate. The body can compensate for a base deficit in three ways: by blowing off CO₂ through greater pulmonary ventilation; by the manufacture of ammonia in the kidneys as a substitute for fixed base in the urine; and by the excretion of urine at its maximum acidity. All of these together can compensate only for a CO₂ combining power of around 35 volumes per cent in a person with intact kidneys. The degree of acidosis present in this child could be compensated only by alkali therapy.

In nephritis, the serum calcium is lowered and the serum phosphate increased. When the calcium and phosphorus values approach equality, regardless of the exact level of serum calcium, tetany ensues unless there is accompanying acidosis of at least moderate severity. Thus, in nephritis, it is never wise to relieve the acidosis completely, nor even to add alkali rapidly; such therapy merely brings on severe convulsions. The maximum amount of alkali given should be only enough to bring up the CO₂ to 30-35 volumes per cent, and the alkali should be given very slowly.

In the present case, the child, when seen by the consultant, showed no sign of air hunger but was breathing quietly and seemed comfortable. We have observed in other infants and children that acidosis of extreme severity may depress the respiratory center and the child may show no symptoms of air hunger. When alkali therapy is given to these children, as the alkali reserve of the blood rises, they pass through a period of extreme air hunger.

The question to be decided for this child was whether alkali therapy was desirable. The boy was in the terminal stage of nephritis—blood non-protein nitrogen 256, urea nitrogen 195, creatinine 8 mg. per 100 cc. Therapy could have increased the survival time at most only a few days, possibly only a few hours. The child was comfortable; the therapy necessarily would have caused

(Continued on page 214)

STATE DEPARTMENT OF HEALTH

Walter L. Diering

PNEUMONIA MORBIDITY AND MORTALITY

Totals of reported cases and recorded deaths due to pneumonia of all forms as notified to the State Department of Health during the 10-year period 1937-1946 are presented in the following table:

PNEUMONIA IN IOWA—1937-1946			
Year	Cases	Deaths	Rate Per 100,000
1937	542	1,746	68.8
1938	588	1,647	64.9
1939	1,344	1,380	54.4
1940	2,005	1,314	51.8
1941	1,680	1,082	42.6
1942	1,287	962	37.9
1943	641	1,019	40.1
1944	629	1,024	40.3
1945	2,031	937	36.9
1946	2,291	844 (Provisional)	33.3

As will be noted in the above table, deaths from all kinds of pneumonia for the year 1945 numbered but little more than half as many as in 1937. Although there has been a very marked reduction in the mortality rate of this dease, due in large part to availability of newer remedies in recent years, pneumonia must still be listed as a "Captain of the Men of Death." According to data released by the U. S. Public Health Service for the years 1944 and 1945, pneumonia (all forms and including influenza) was fifth from the highest of the ten leading.causes of death.

Superintendents and staff physicians of the many hospitals in Iowa cooperate with the State Department of Health in the notification of acute pneumonia cases. The Department greatly appreciates the interest and effort involved in the forwarding of such reports.

CURRENT PNEUMONIA PROBLEMS

In a recent significant article by Blankenhorn of the Department of Internal Medicine, Cincinnati General Hospital, the author discusses two problems of pneumonia which persist in spite of the newer remedies which have in recent years been available. He states two problems as questions, one being, "Why do people fall sick with pneumonia?"; the other, "Why do people die of pneumonia?"

In answer to the first question, the author refers to the relationship between the common cold and pneumococcus pneumonia. The fact that many people are at times carriers of virulent types of pneumococci is a factor to account for spread of infection to susceptible persons.

Although case fatality rates from pneumonia have been low in past years, there has recently been an increase in the death rate in some areas. For example, in the Cincinnati General Hospital, where emphasis continues to be placed on laboratory work and type determination of pneumococci, type VII has been found to cause a very virulent infection. During 1944 and 1945, of 9 patients whose pneumonia was due to type VII and whose blood culture was positive, 8 of the patients died, the case fatality being 89 per cent. Among 20 patients who had other types of pneumonia with positive blood culture, 7 deaths occurred, a fatality of 35 per cent. No deaths resulted when patients had type VII pneumonia and negative blood cultures.

In answering the question as to why patients die of pneumonia, Blankenhorn attributes death to four main factors: (1) respiratory failure; (2) circulatory failure; (3) coma; and (4) shock.

Considering the method of treatment of respiratory failure, the same author states: "I think the most important factor in treating respiratory failure is to stop the spread of the lesions in the lungs. I am sure that the sulfonamides do not abruptly stop spread of the lesions; in fact, the lesions can be seen to spread after the drop in temperature. I am sure that penicillin also does not abruptly stop the spread of the lesions. I think we must look for help elsewhere. On experimental evidence specific antiserum does the most and the quickest to stop the spread of the lesion. Antiserum, although a good remedy, has so many disadvantages that it seems about to be abandoned. . . ."

REFERENCE

Blankenhorn, M. A.: Persistent problems of pneumonia. Cincinnati J. Med., xxvii:425-435 (July) 1946.

BRUCELLOSIS OR UNDULANT (MALTA) FEVER IN IOWA—1946

During 1946, reported cases of brucellosis of man or undulant fever in Iowa totaled 638. Completed through the courtesy of attending physicians, 612 or 96 per cent of all the case reports contained desired information regarding most or all of factors such as the history of contact with farm animals, age, sex and occupation of the patients.

Among 612 individuals reported as suffering this illness last year, 454 or 74 per cent had been in direct contact with hogs and cows before onset of illness. The remaining 158 (26 per cent) gave no history of contact with livestock, and it is assumed that exposure resulted through use of unpasteurized dairy products from cows infected with brucellosis or Bang's disease.

In the "no contact group," including 158 persons, 47 per cent were males and 53 per cent were females. In the "contact group" comprising 454 people, 85 per cent were males and 15 per cent females.

Of the "no-contacts," 60 were housewives, 59 belonged to the merchant-professional group, 24 were school children and students, several were dairy employees, while the occupation of the remainder varied.

Patients in the "contact group" included 252 male farm workers, 75 packing house employees, 55 farm wives, 14 veterinarians and their assistants; 16 were farm boys, 4 farm girls, 5 worked in retail meat markets or at locker plants, 11 were livestock dealers, truckers, sales barn or dairy

workers. Types of contact of 22 patients (clerks, merchants, professional persons, tradesmen) were varied or unspecified.

BRUCELLOSIS AMONG PACKING HOUSE WORKERS

So far as known, data are not at hand to indicate the reported morbidity due to brucellosis among employees in the packing industry in the United States. The morbidity rate among packing house workers in Iowa is based on case records compiled over a period of years in co-operation with Iowa physicians. The morbidity rate per 100,000 in the packing house group, compared with other population groups in the state, is shown in the enclosed table. Since reports are not received from all of the packing plants, the total number of cases is actually considerably higher than indicated by the case reports of this Division at the Iowa Department of Health.

The following table gives the total of brucellosis reports in Iowa for the five-year period 1942-1946 and also the number of cases in employees of the packing industry:

BRUCELLOSIS IN IOWA, 1942-1946

Reported morbidity in packing house workers in the state as a whole:

Year	Packing House Workers	Total Reports
1942	59	333
1943	47	416
1944	66	295
1945	54	482
1946	75	638
5-Yr. Total.....	301	2,164
5-Yr. Average..	60	433

MORBIDITY REPORT

Diseases	Mar. '47	Feb. '47	Mar. '46	Most Cases Reported From
Diphtheria	9	9	18	Jackson, Tama, Washington
Scarlet Fever	228	209	248	Clinton, Polk, Washington
Typhoid Fever	1	2	0	Jackson
Smallpox	1	0	3	Black Hawk, Polk, Washington
Measles	322	72	540	Des Moines, Dickinson, Polk
Whooping Cough	76	101	44	Black Hawk, Polk, Winneshiek
Brucellosis	134	55	54	Almost all counties few cases
Chickenpox	475	345	153	Black Hawk, Dubuque, Woodbury
German Measles	3	2	49	Boone, Iowa
Influenza	16,864	0	0	Clarke, Des Moines, Polk
Malaria	2	6	31	Polk
Meningitis Meningococcus	6	11	8	Scattered
Mumps	307	75	226	Calhoun, Kossuth, Woodbury
Pneumonia	47	20	21	Fremont, Black Hawk, Marion
Poliomyelitis	0	2	0	.....
Tuberculosis	68	43	55	For the State
Gonorrhea	112	147	193	For the State
Syphilis	148	113	180	For the State

The JOURNAL of the Iowa State Medical Society

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Vol. XXXVII MAY, 1947 No. 5

Annual Meeting

Those physicians who attended the ninety-sixth meeting of the Iowa State Medical Society went home impressed with the fact that the 1947 session was an outstanding success. The registration was impressive, there being 800 physicians and 354 additional registrations, bringing the total to 1,154.

The topics discussed by our guest speakers were stimulating and their excellent presentation appreciated. It is unusual for a president of a state medical society to have his own son as a guest speaker; Dr. Robert L. Parker enjoyed such distinction at this meeting when Dr. Robert L. Parker, Jr., presented two papers before the medical section.

The House of Delegates was confronted with special problems which will require further study. The transactions of this body will appear in the July issue of the JOURNAL. Dr. James Reeder of Sioux City was named president-elect, and it was announced that Des Moines will be the location for the next meeting.

Space for exhibitors was at a premium this year, and at all exhibits active interest was evident. Section meetings were well attended. The annual golf tournament was hampered by snow fall, but a few hardy golfers appeared to take part in the tournament. The hobby show again presented a variety of interesting exhibits. The Woman's Auxiliary meetings again were well attended. The importance of this body was particularly emphasized in the House of Delegates with regard to

its unique position in the field of public relations.

The technical exhibits were well prepared. Contributors of these displays were rewarded for their efforts by a genuine interest on the part of the members of the Society.

Those physicians who attended the current meeting were stimulated; it was good to have them here, and it is hoped that each will be able to return next year and that those who found it necessary to remain at home will be able to come. However, those who did not attend will have the opportunity to share the papers presented through their publication in the JOURNAL. Certainly the section heads, the society officers and others who devoted much time and effort to the planning of this meeting deserve the grateful thanks of each member of the state society.

Atlantic City Session

You will find the complete program in the *Journal of the American Medical Association* issue of May 3 and information regarding the various features which will signalize the centennial meeting of the American Medical Association which will be held in Atlantic City, N. J., June 9 to 13. In addition to scientific discussions chosen for special or timely interest, panel discussions of the modern management of heart disease, emergency surgery and antibiotic therapy have been prepared. Guest participants will include Prof. George W. Pickering of London, Prof. Herbert Seddon of Oxford, and Sir Howard Florey of Oxford who did much in the development of penicillin.

Additional events will mark the centennial meeting. The Philadelphia festival orchestra will provide the music for the opening general meeting on Tuesday night, June 10.

Ample space has been provided for both scientific and commercial exhibits in connection with this meeting.

As noted in the advertising section of last issue, a special tour is available for members of the Nebraska and Iowa State Medical Societies providing an opportunity to combine business and pleasure for those interested.

Again it is essential for those who plan to go to Atlantic City to make hotel reservations early.

Parenteral Alimentation

Milestones in developments of surgery have in the past frequently marked advances in allied fields. One of the more recent advances leading to safer surgery has been the development of parenteral alimentation until this subject has now reached the status of practical importance. Robert

Elman, an associate professor of surgery at Washington University, has recently presented a thorough report on this subject.*

Six nutritional substances are the basic units which can be utilized by the blood. These consist of water, salts, protein, carbohydrates, fat, and vitamins. The object of parenteral alimentation should be the avoidance of starvation and the correction of chronic deficits.

Parenteral injection should be used only where the correction of acute deficits or oral channels are not available. Immediate replacement is necessary in acute hemorrhage. Plasma alone is required with severe burns, large wounds, and extensive infected surfaces such as peritonitis and empyema. Loss of water and salts occurs with water deprivation, vomiting and diarrhea, intestinal fistula, and in acidosis or alkalosis. Glucose is needed to build up glycogen in severe hepatic disease. The use of protein corrects hypoproteinemia in liver disease. It has also been discovered that surgery without starvation allows better results, so it is often necessary to correct for partial postoperative starvation.

The general use of whole blood has been too limited. The difficulty in the establishment of blood banks is still a problem in most rural areas. However, the use of frequent blood transfusions is unequalled in restoring blood volume following acute hemorrhage just as blood plasma will react efficiently where there has been an acute loss of plasma. Intravenous saline infusions correct electrolyte deficits. Glucose in 5 or 10 per cent solution, when added to water or saline, builds up liver glycogen and prevents ketosis. Sodium lactate may be given alone or with glucose or saline. This drug is useful in combating acidosis or in producing alkalinity of the urine in sulfa drug therapy. Amino acid mixtures such as amigen and glucose in a 5 per cent solution given in 2 liters will furnish 100 gm. of protein, 100 gm. of carbohydrates, and 5 gm. of salt. This meets the daily requirements except for vitamins. The vitamins may be added to the glucose or saline or injected separately in a small volume. The most important vitamins are C, thiamin, riboflavin, niacin, and K in certain instances.

In the preoperative preparation of a surgical patient, it is well to remember that a malnourished patient suffers from wasting of body tissue, including plasma and red cells, depletion of hepatic glycogen and often exhaustion of vitamin stores. Dehydration is common if the patient has suffered vomiting or diarrhea. To correct for chronic deficits these patients should have daily

administration of amigen and glucose, vitamins, whole blood or plasma as indicated, isotonic saline and 10 per cent glucose. This regimen is necessary inasmuch as acute deficits almost always occur after operation. Proper attention to parenteral alimentation will result in a patient who is able to withstand operation more successfully and who may expect an easier convalescence with fewer postoperative complications.

Annual Interprofessional Program

Most physicians in Iowa are familiar with the Iowa Interprofessional Association and are completely in accord with its purpose of building and maintaining friendly, cooperative relations between the five groups of medicine, dentistry, veterinary medicine, pharmacy and nursing. In the past many local interprofessional meetings have shown the mutual problems of these five groups and have established a common meeting ground for the professions whose primary endeavor is in the field of health.

During the war interprofessional meetings suffered the same fate as many others, but last year two programs were presented in Des Moines. The official one was by courtesy of the pharmacists who devoted an evening of their annual meeting to interprofessional subjects. The other was a part of our own annual meeting, the open session addressed by Senator Hickenlooper.

This year the dentists will be hosts to the interprofessional group. Dr. Harold Hillenbrand of Chicago, secretary of the American Dental Society, formerly its editor, will speak on the value of interprofessional cooperation. The meeting will be held in the grand ball room of Hotel Fort Des Moines in Des Moines on Tuesday evening, May 6, at 8 p. m. All physicians are invited and urged to attend.

Annual Program

Iowa Interprofessional Association

Hotel Fort Des Moines—Grand Ball Room
Des Moines, Iowa

Tuesday, May 6, 1947

8:00 p. m.

Greetings and Foreword—Fred Sternagel, M.D., West Des Moines, President, Iowa Interprofessional Association.

Introduction of Speaker—Floyd W. Pillars, D.D.S., Des Moines, Vice President, Iowa Interprofessional Association.

The Value of Interprofessional Cooperation—Harold Hillenbrand, D.D.S., Chicago, Secretary, American Dental Association.

*Elman, Robert: Parenteral Alimentation in Surgery. New York, Paul Hoeber, Inc., 1947.

NEWS NOTES

from the

Committee on Medical Service and Public Relations

Rural Medical Supply

One of the phases in rural medical supply which has been much discussed is that of the change in the distribution of physicians. Those men who have been practicing in Iowa for as short a time as twenty-five years will remember when every small village had its doctor. For example, in one representative rural county there were, twenty-five years ago, eight towns besides the county seat which had one or more physicians. Three of these had two doctors each. Now there are only three of these towns which have a doctor; none have two. The other five are without a resident physician. Two doctors moved to larger towns, the others have died, and no one has moved in to take their places.

Each of these towns is lamenting its lack of medical attention. Each feels that it should by all means have a doctor living in the town. Two of these towns are ten miles from the nearest doctor, the others from five to ten miles. This condition does present a problem and one which will probably never be solved by the provision of a resident medical man in each of the communities.

The residents of these towns do not see why a doctor does not move in. "We have always had a doctor, and he always made a good living," they say. They do not realize the changes which have occurred in the practice of medicine, for there is a great difference between the needs of a general practitioner today and thirty or forty years ago. Most of their doctors settled in the towns before 1900 when modern methods of diagnosis and treatment had not been developed. Then the only things needed for a reasonably good medical practice were a course of training in medicine, an intelligent physician able to use his five senses, a supply of medicines in his bag, and a team and buggy to get around the country. Almost all patients were seen in the home, as it was too long a trip by horse and buggy and the exposure too great to take a sick patient to the doctor's office. The physician gave the patients good care but was very limited to the number he could see in an average day and night.

The changes in distribution of medical personnel are following the same trend as many things in commercial fields. The number and variety of the stores in small towns have decreased. These small towns now supply only a limited portion of the needs of the people who go to the neighboring larger town for much of their shopping. Medical services can and probably will be supplied on the same "trade area" basis. For office calls requiring use of diagnostic procedures, laboratory work, etc., the patient will have to go to the larger town having a medical center or more complete medical facilities. This does not entail great hardship, certainly no more than going to the same place for clothing, furniture and many other necessities.

Another factor which is looming large in the distribution of physicians is the unwillingness of the new physician to go to the small town because of factors which are lacking in the small community. The young man looks forward to the education of his family. He wants good schools, satisfactory social opportunities, recreational facilities and those things which go to make a satisfactory life aside from professional attainments.

In studying distribution of medical supply, there has always been a tendency to report on the number of physicians per thousand population, based on counties. The artificial political subdivision is no real basis for decision as to adequacy of medical personnel. There may be and often are towns with adequate numbers of doctors on all sides of a given county. The people of that county may all be within ten or fifteen miles of a medical center and yet there may be only one or two physicians actually living in the county. With modern transportation this does not mean that the county is at all short of doctors.

As we look at Iowa we find that the state as a whole is well supplied with doctors. The distribution is not ideal but is generally adequate. There are few places where a town or village is more than ten or twelve miles from the nearest doctor. There is almost no area which is more than thirty miles from a hospital. When a patient

is once put into an ambulance, it makes little difference whether the hospital to which he is taken is ten or twenty miles away. He will be there in thirty minutes.

The improvement which it is hoped will come about in Iowa through proper use of the provisions of the recently enacted Hospital Survey and Construction Act should remedy all of the poorest medical supply situations in the state. Diagnostic and health centers where needed and new or enlarged hospitals in areas which are relatively poorly supplied will make a high grade of medical care available to our citizens. Then the problem will be entirely up to the individual medical man. He it is who finally determines the high or low grade of medical care which is given the patient, and it is he who will have to see to it that he keeps himself up to the latest developments in medicine which are applicable to his field.

CLINICOPATHOLOGIC CONFERENCE

(Continued from page 208)

acute discomfort for several hours, possibly resulting in severe convulsions. It was the opinion of the consultant that alkali therapy was inadvisable for this patient.

Dr. N. G. Alcock (Urology): From the clinical standpoint there is no explanation of the findings because the data were obtained when the patient was terminal. Most stones are formed on foreign bodies in the urinary tract. One explanation might be to account for multiple foreign bodies in both kidneys. A possible explanation is the previous existence of septicemia with multiple kidney abscesses which did not heal properly. This is a very rare condition.

Dr. I. Ponseti (Orthopedic): Were the extremities examined by x-ray?

Dr. Flocks: One hand and leg were x-rayed. There was no evidence of bony disease.

Dr. Alcock: We have a patient now with a large stone in each kidney. One kidney is severely infected; the other is not at all infected. This makes explanation on the basis of infection difficult.

BIBLIOGRAPHY

1. Hammarsten, G.: Dietetic therapy in formation of calcium oxalate calculi in urinary passages. *Skandinav. Arch. f. Physiol.*, lxxx:165-175, 1938.
2. Herkel, W., and Koch, K.: Untersuchungen zur Oxalsäure-Ausscheidung insbesondere bei Nierensteinkranken. *Deutsches Archiv. f. klin. Med.*, clxxviii:511-537, 1936.

ADDITIONAL EXHIBITORS

Following publication of the names of exhibitors at our annual session in the March Journal, two firms made arrangements to support the meeting. They were the House of Vision and the Babee-Tenda Company.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p.m.

WSUI—Thursdays at 2:45 p.m.

April 30-May 1	A Health Inventory	E. E. Shaw, M.D.
May 7- 8	Child Health	C. J. Baker, M.D.
May 14-15	Constipation	C. Dudley Miller, M.D.
May 21-22	Vacations	
May 28-29	Mental Health Problems	

AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The Third American Congress on Obstetrics and Gynecology will be held in St. Louis September 8 to 12, 1947. The congress is sponsored by all the obstetrical societies including the section on obstetrics and gynecology of the American Medical Association, the American Gynecologic Society, and many other obstetric and gynecologic organizations. This program will be for specialists, general practitioners, hospital administrators, and public health workers.

Three panel-type morning sessions will be held on the following subjects: anesthesia and analgesia, Tuesday, September 9, Dr. Nicholas J. Eastman, chairman; cancer, Wednesday, September 10, Dr. Robert A. Kimbrough, Philadelphia, chairman; and caesarian section, Thursday, September 11, Dr. Edward Schumann, Philadelphia, chairman.

The afternoon meetings of the medical section of the Congress will consider the "Psychosomatic Aspects of Pregnancy" on Tuesday; "Pregnancy Complicated by Heart Disease, Diabetes and Tuberculosis" on Wednesday; and "Recent Advances in Endocrinology" on Thursday.

Round table discussions from 4 to 5 p.m. daily will consider such topics as abortions, asphyxia, fibroids, prolonged labor, infertility, early ambulation, uterine bleeding, nutrition in pregnancy, endometriosis, the Rh factor, erythroblastosis, geriatric gynecology, and other pathologic conditions relating to obstetrics and gynecology.

Concurrent round table sessions will be held for nurses, hospital administrators and public health workers.

FIFTY YEAR CLUB MEMBERS

April 10, 1947

ADAMS, ERNEST M.	Central City	MICHEL, BERNARD A.	Dubuque
ALDRICH, J. FRANK	Clarinda	MILLER, CHARLES W.	Preston
AMDOR, WM. F.	Carbon	MILLS, FRANK W.	Ottumwa
AUNER, JAY F.	Des Moines	MINASSIAN, H. A.	Des Moines
BATES, WM. R.	Fort Dodge	MINER, JAMES B., SR.	Charles City
BEAM, WATSON W.	Rolfe	MORRIS, ZENELLA E. N.	Stockport
BEATTY, EDWARD D.	Mallard	MORRISON, WESLEY J.	Cedar Rapids
BELL, EDWARD P.	Pleasantville	MORSE, CHARLES H.	Eagle Grove
BEVERIDGE, THOMAS F.	Muscatine	MYERS, FRANK L.	Sheldon
BIERRING, WALTER L.	Des Moines	NELSON, HARRY E.	Dayton
BIRNEY, CLEANTHUS E.	Estherville	NETOLICKY, WESLEY J.	Cedar Rapids
BOODY, GEORGE	Independence	NICOLL, DAVID T.	Mitchellville
BOYD, FRANK E.	Colfax	NORTON, ALVA C.	Rockwell City
BOYER, HOWARD C.	Waterloo	NYSEWANDER, CHRISTIAN	Des Moines
BRAUCHT, FREDERICK E.	Elkader	PACE, ARTHUR A.	Toledo
BROCK, WALTER R.	Sheldon	PARKER, JAMES D.	Fayette
BROWN, ERIC N.	Marengo	PATTERSON, JOHN N.	Burlington
BURBANK, FRANK E.	Pleasantville	PECK, RAYMOND E.	Davenport
CARSON, ANDROS	Des Moines	PHELPS, MYRON H.	Van Wert
CARVER, WM. F.	Fort Dodge	PRESNELL, J. WILLIAM	Scranton
CHITTUM, JOHN H.	Wapello	QUIRE, FRANK E.	Lynnville
COLE, ELMER J.	Woodbine	RAMBO, DAVID A.	Ottumwa
COONEY, CHARLES J.	Oelwein	REILEY, WILLIAM S.	Red Oak
CRAIG, JAS. A.	Keosauqua	RILEY, JOHN	Exira
DEAN, WM. F.	Osceola	ROBINSON, ROBERT E.	Waverly
DITTMER, MARTIN E.	Colesburg	RUML, WENTZLE	Cedar Rapids
DITTMER, HENRY A.	Manchester	SAMS, JOSEPH H.	Clarion
DENNISON, JOHN C.	Bellevue	SANDERS, WILLIAM E.	Des Moines
FISHER, CYRUS	Central City	SAWYER, PRINCE E.	Sioux City
FOLEY, FRED C.	Newell	SCOTT, SOPHIE H.	Des Moines
FOLTZ, ELOISE M.	Perry	SCOTT, WALTER E.	Adel
FOWLER, CHARLES C.	Lovilia	SINNING, AUGUSTUS	Iowa City
GALMAN, JAMES J.	Hospers	SMITH, FERDINAND J. E.	Milford
GANOE, JAMES O.	Ogden	SMITH, FRANKLIN C.	Mt. Ayr
GAEDNER, PAUL E.	New Hampton	SOE, PEDER	Kimballton
GEESEKA, OTTO A.	Mt. Pleasant	SPAULDING, HOMER L.	Ankeny
GILES, GEORGE C.	Oakland	STEVENS, HARRY L.	Floris
GILFILLAN, HOMER J., SR.	Bloomfield	THOMAS, LOUIS A.	Red Oak
GRAENING, CHARLES H.	Waverly	THOMPSON, HARRY F.	Forest City
GRAY, HENRY A.	Keokuk	THOMPSON, WILLIAM L.	Bayard
GRIFFIN, CLARK C.	Vinton	THROCKMORTON, R. FRED	Des Moines
GROMAN, AUGUST	Odebolt	TINLEY, MARY L.	Council Bluffs
HAMILTON, BENJ. C., SR.	Jefferson	TOMBAUGH, FRANK M.	Burlington
HEADY, CONDA C. C.	Bloomfield	VANCE, FREDERICK E.	Eddyville
HEATHMAN, FRANK E.	Pocahontas	VESTERBORG, PEDER H.	Forest City
HEETLAND, LOUIS H.	Sibley	VOLLMER, KARL	Davenport
HENRY, CLYDE A.	Farson	VON LACKUM, HERMAN J.	Dysart
HIGHT, WILLIAM B.	Des Moines	WAILES, JOHN W.	Davis City
HUSTON, HERBERT M.	Ruthven	WALLAHAN, JAY H.	Corning
HYATT, CHARLES N.	Albia	WALSH, THOMAS N.	Hawkeye
JOHNSON, ALBERT P.	Sigourney	WALSTON, EDWIN B.	Des Moines
JONES, LOUIS H.	Wall Lake	WANAMAKER, AMBROSE E.	Hamburg
KERLIN, JARED D.	Des Moines	WEDEL, JAMES R.	Keokuk
KERN, LESTER C.	Waverly	WELLS, FRED L.	Des Moines
KING, ELLIOTT R.	Letts	WESTENBERGER, JOSEPH C.	St. Ansgar
KISOR, FRANK H.	Mechanicsville	WHITEHILL, NELSON M.	Boone
KRIEBS, FRANK J.	Elkport	WHITMIRE, WILLIAM L.	Sumner
LADD, FRED G.	Cedar Rapids	WILSON, FRED C.	Colesburg
LAUGEL, AMBROSE M.	Breda	WOLFE, THOMAS L.	Mt. Vernon
LEASE, NIMROD J.	Crawfordsville	WOODBIDGE, JAMES W.	Emmettsburg
LEE, GISLE M.	Thompson	WOODS, HARRY E.	Birmingham
LINN, ELLIS G.	Des Moines	WOODS, HERBERT C.	Tama
LOOSE, DAVID N.	Maquoketa	WRIGHT, WALTER N.	Rose Hill
McBURNAY, GEORGE F.	Belmond	WYLAND, ASA O.	Underwood
McLAUGHLIN, CHARLES W.	Washington	YOUNG, HENRY C.	Bloomfield
McNAUGHTON, LUTHER D.	Eagle Grove		
MASON, STELLA M.	Mason City		

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. MARION H. BRINKER, Jefferson

President-elect—MRS. FRED MOORE, Des Moines

Secretary—MRS. CHARLES A. NICOLL, Panora

Treasurer—MRS. HENRY G. DECKER, 2908 Woodland, Des Moines

WORTH COUNTY AUXILIARY

The Worth County Auxiliary sponsored a luncheon honoring Mrs. M. H. Brinker at Hotel Hanford, Mason City, March 21. Doctors' wives from Worth, Cerro Gordo, Hancock, Butler and Wright counties were present. Mrs. Brinker gave a very interesting talk.

Mrs. S. S. Westly, President

DUBUQUE COUNTY AUXILIARY

The Woman's Auxiliary to the Dubuque County Medical Society held its regular meeting March 11 in the form of a luncheon at Mrs. Heller's. Eighteen members were present. The table was attractively decorated with lovely spring flowers and matching tapers. During the business meeting the following reports were given:

The *Hygeia* drive ended with a total of forty subscriptions. As is the custom four of these were contributed by the Auxiliary to the public library, Finley Hospital, Mercy Hospital and Dubuque Boys' Club.

The Auxiliary voted to furnish a room in the new addition to Mercy Hospital. It was decided to carry out this project by asking the wife of every doctor in the Dubuque County Medical Society for a donation of \$5 or more. Contributions thus far have amounted to over \$180.

Last year the May dinner given for the Dubuque County Medical Society was such a success that it was voted to make it an annual affair. Mrs. Henneger appointed the following to work on this committee: Mrs. D. C. Conzett, Mrs. J. E. Pickard, and Mrs. C. J. Schneller. The election of officers resulted in Mrs. N. A. Henneger being re-elected president; Mrs. H. M. Korn, vice president; and Mrs. E. T. Thorsness, secretary-treasurer.

Mrs. Clarence Darrow

LEGISLATIVE PROGRAM

The Iowa Society for Crippled Children and the Disabled is sponsoring a bill which has been introduced into the 52nd General Assembly. The bill would provide for a Hospital-School for severely handicapped children, to be built and maintained by state funds under the State Board of Education in connection with the University of Iowa and the University Hospital, and located in reasonable proximity to them.

Several sections of the bill are quoted below:

Section 2. Every resident of the state who is not less than three nor more than 21 years of age, who is so severely handicapped as to be unable to acquire an education in the common schools, and every such person who is 21 and under 35 years of age who has the consent of the state board of education, shall be entitled to receive an education, care, and training in the institution, and nonresidents similarly situated may be entitled to an education and care therein upon such terms as may be fixed by the state board of education. The fee for nonresidents shall be not less than the average expense of resident pupils and shall be paid in advance. Residents and persons under the care and control of the board of control who are severely handicapped may be transferred to the hospital-school upon such terms as may be agreed upon by the state board of education and the state board of control.

Section 3. The term "severely handicapped" shall be interpreted for the purpose of this act: (1) Persons who are educable but severely physically and educationally handicapped as a result of cerebral palsy, muscular dystrophy, spinal bifida, arthritis, poliomyelitis, or other severe physically handicapping conditions; and (2) persons who are not eligible for admission to the schools already established for the deaf, blind, epileptic, or feeble-minded.

Section 4. There is hereby appropriated from the general fund of the state of Iowa, from funds not otherwise appropriated, the sum of five hundred thousand dollars (\$500,000.00) to the state board of education for the purpose of securing suitable real estate, erecting, constructing or improving buildings thereon, and to provide necessary equipment.

Section 9. There is hereby appropriated from the general fund of the state of Iowa from funds not otherwise appropriated to the board of education for the hospital-school for each year of the biennium beginning July 1, 1947 and ending June 30, 1949, the sum of one hundred nine thousand dollars (\$109,000.00) or so much thereof as may be necessary to be used in the following manner:

For salaries, support, maintenance, and	
miscellaneous purposes	\$100,000.00
For repairs, replacements or alterations.	9,000.00
Total for hospital-school.....	\$109,000.00

Several sections of the 1946 Code have been amended in other sections of the proposed bill. These amendments provide that current procedures in use for the School for the Deaf and Blind shall apply to the Hospital-School also.

Support

Resolutions from many different groups have been received, indicating approval of the bill. The American Legion, State Junior Chamber of Commerce, State League of Women Voters, AAUW, PBW, Federation of Women's Clubs, and local groups are among those which have endorsed the proposal.

The Need Is Great

Such a school is needed because there are educable children who, because of the severity of their physical handicaps, are unable to participate profitably in any program of special education through the local school system. In a Hospital-School they could receive physical treatment and education which would give them a better chance to become useful and self-supporting.

The large number of such children around the state present a tremendous challenge. They are excluded from school. Their parents are forced to bear the full load of their physical care without being adequately trained or equipped to do that job. They worry about who will care for these children after they are gone, and often it is the state or the county. At the same time, the potential ability of these youngsters simply goes to waste. In the cold, hard logic of dollars and cents, such an investment in human welfare will justify itself again and again. —From Sunny Side, March, 1947.

MEDICAL BILLS IN CONGRESS

Department of Health, Education and Security

A bill introduced by Senator Aiken, Vermont, S. 712, proposes to constitute the Federal Security Agency a Department of Health, Education, and Security. The Department will be administered by a secretary appointed by the President by and with the advice and consent of the Senate and there will be an under secretary and two assistant secretaries, also appointed by the President by and with the advice and consent of the Senate. The bill does not prescribe the qualifications to be possessed by either the secretary, the under secretary or the two assistant secretaries.

Health of School Children

Senator Morse, Oregon, by S. J. Res. 66, would authorize the Secretary of Labor, acting through the Children's Bureau "of the Department of Labor," in cooperation with Federal, state and local agencies and qualified institutions of higher education to (1) make studies of the health and physical status of children of school ages; (2) make studies of the facilities and services offered by schools for the correction of physical defects of children of school ages; and (3) recommend the use of, and demonstrate in representative urban and rural areas,

methods of conducting school health examinations and providing school health services. For the purpose of defraying the expenses of the Department of Labor in carrying out the provisions of the joint resolution and providing funds for direct grants by the Secretary of Labor to State Departments of Health, State Departments of Education, and qualified institutions of higher learning, there will be authorized to be appropriated \$100,000 for the fiscal year ending June 30, 1947, and \$450,000 for each of the succeeding fiscal years.—From The Bulletin, March, 1947.

IOWA STATE LEAGUE OF NURSING EDUCATION

Sponsors Statewide Nurse Enrollment Campaign

Because the critical shortage of nurses is causing many hospitals in Iowa to close off rooms; send patients home prematurely; discourage other would-be patients; and putting undue strain on the hospital staffs—the Iowa State League of Nursing Education voted to sponsor a statewide nurse enrollment campaign. The League's president, Mona Jackson; secretary, Helen Cromwell; and treasurer, Sister Mary Olivia, are representing the League in the necessary campaign planning and execution. The Iowa State Hospital Association called a special meeting February 1 of all hospital superintendents and passed a resolution that every hospital in the state should give \$1.25 per bed as its fair share of campaign costs. Other allied associations, including the Iowa State Nurses' Association, and other interested parties have also helped in the financing and promotion of the campaign.

Reasons Behind Shortage

The reasons behind the present shortage are varied:

A. Lack of coordinated effort to interest girls in a nursing education on par with that put forth by beauty and business schools, colleges, etc.

B. Enrollment in schools of nursing have been steadily decreasing.

C. Hospital admissions are at an all time high, due to recently-discovered drugs, new treatments and equipment, etc.—all of which require hospitalization.

D. Thirty-two per cent more babies are being born in hospitals than 8 years ago.

E. Memberships in Iowa's hospital-care participation plans now number 410,000—an increase of 100 per cent in the last 7 years.

F. An increased emphasis on early treatment measures for cancer, tuberculosis, psychiatric disorders, etc.

G. Greater demand for nurses by Veterans' Hospitals.

The dearth will undoubtedly grow worse because of ambitious building plans for new or enlarged hospital units throughout the states.

Campaign Promotion

Highlight of the campaign will be a special 10-minute, 16 mm. movie titled "For You to Decide." This film is now available for immediate showing to civic groups, high schools, etc. District chairmen have been appointed to assure even and thorough distribution of the film in all ninety-nine counties.

Supplementary promotional material will be a general campaign folder written from the teen-age viewpoint and builds a "you" association whereby the prospect can easily place herself in like circumstances and a parents' folder slanted for more mature reasoning. Both the film and the folders outline a simple procedure to the girl in order to encourage as many inquiries as possible.

All publicity and other material will appeal to the girls' natural desire for security, education and position and will stress the educational, humanitarian and financial advantages of the nursing profession. Publicity for the campaign will be solicited from the forty-two daily and 431 weekly newspapers in Iowa, both Press Associations, twenty-nine radio stations, radio personalities and the fourteen trade papers serving the hospital, medical and nursing fields. Large advertisers will be contacted for tie-in space and small tie-in ads furnished.

The campaign takes into consideration that the biggest nurse potential is contained in the following groups:

Girls graduating from public and parochial schools.

Girls who have been out of high school from one to three years but who have yet to marry or decide upon their life's work.

Junior college graduates.

Interested college students.—"I-S-N-A Bulletin," March, 1947.

BLUE CROSS IN 1946

Hospital Service, Inc., of Iowa added 106,970 to its membership in 1946 making a total of 344,061 members on Dec. 31, 1946, an increase of 45.1 per cent. This was almost twice the national average gain percentagewise. Five million new members were added through 88 plans, bringing the total Blue Cross enrollment up to nearly 26,000,000. It was a record year but there is still much to be done. There are over 2,000,000 people in the area served by this Plan. At least 75 per cent of these could be covered under its present regulations. The goal for 1947 is 500,000—one-third of the potential. Approximately 750,000 rural residents are eligible of which 100,000 are enrolled.

The past year the method of payment to the hospitals was changed from the per diem rate to one based on regular charges for Blue Cross benefits. This provides a more equitable basis as it reflects the amount of service given by the individual hospital. It also creates dangers in view of higher costs and increased rates in hospitals. In 1946 cases in-

creased 61 per cent over the admissions of the previous year, which is more than the increase in membership. The per diem allowance for Blue Cross benefits for cases admitted prior to June 1, 1946, advanced 16.8 per cent over 1945 and for cases from June 1 to December 31, 29.3 per cent over 1945. The Plan paid \$2,023,996.23 for the care of members during 1946.

An acute problem facing the Plan, the members and the hospitals is the question of x-ray benefits. Many patients are demanding hospitalization in order to get x-ray coverage. This is a benefit that was not contemplated and may result in the elimination of this service.

Maximum service to members for the least cost is the primary reason for the existence of Blue Cross. Mounting costs of benefits may delay the wide spread of the plan.

Community leaders, newspapers and radios have all given the finest cooperation toward the 92 hospitals who sponsor and guarantee not only this plan's benefits, but the goal of adequate hospital care for every individual in the area served by Hospital Service, Inc., of Iowa.

The Des Moines Blue Cross Plan operated during 1946 on the following distribution of income: 83.6 per cent was paid for hospital care; 14.2 per cent for operating and field service expense, and 2.2 per cent for reserves.

The Medical Plan is increasing its membership. Its growth the first year was similar to that of Blue Cross. The future growth depends on economic conditions and the willingness of employers to participate in the cost of the combined program.

PUBLIC HEALTH NURSING WEEK

April 20-26, 1947

Public Health Nursing is an integral part of a whole health program available to every individual in the United States. A Public Health Nursing Week especially designated will give an opportunity for lay and professional people to work together toward a jointly accepted goal.

Three years ago leaders in the Public Health Nursing field undertook an annual program for more adequate local, state and national interpretation of a service vital for our national health. Just as all must work to provide the quality and quantity of public health nursing service that this nation needs, so all must join in interpreting that service so that no person will remain ignorant of the service available to the community and to himself.

This year we are to continue this program by sponsoring Public Health Nursing Week April 20-26. Communities throughout the country can render a great public service by lending their strength to this observance and helping to interpret public health nursing service to the consumer and to the potential public health nurse.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- ALLERGY IN THEORY AND PRACTICE**—By Robert A. Cooke, M.D., Sc.D., F.A.C.P., Attending Physician and Director of the Department of Allergy, The Roosevelt Hospital, New York City. W. B. Saunders Company, Philadelphia, 1947. Price, \$8.
- EXPERIENCES WITH FOLIC ACID**—By Tom D. Spies, M.D., Associate Professor of Medicine, University of Cincinnati School of Medicine, Director of the Nutrition Clinic, Hillman Hospital, Birmingham, Alabama. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.
- FUNDAMENTALS OF CLINICAL NEUROLOGY**—By H. Huston Merritt, M.D., Professor of Clinical Neurology, College of Physicians and Surgeons, Columbia University; Chief of Division of Neuropsychiatry, The Montefiore Hospital; FRED A. METTLER, M.D., Ph.D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University; and TRACY JACKSON PUTNAM, M.D., Professor of Neurology and Neurological Surgery, College of Physicians and Surgeons, Columbia University, New York. The Blakiston Company, Philadelphia, 1947. Price, \$6.
- PARENTERAL ALIMENTATION IN SURGERY With Special Reference to Proteins and Amino Acids**—By ROBERT ELMAN, M.D., Associate Professor of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo. Paul B. Hoeber, Inc., New York, 1947. Price, \$4.50.
- PRACTICAL PHYSIOLOGICAL CHEMISTRY**—By Philip B. Hawk, Ph.D., President, Food Research Laboratories, Inc., Long Island City, New York; BERNARD L. OSER, Ph.D., Director, Food Research Laboratories, Inc., Long Island City, New York; and WILLIAM H. SUMMERSON, Ph.D., Associate Professor of Biochemistry, Cornell University Medical College, New York City. Twelfth edition. The Blakiston Company, Philadelphia, 1947. Price, \$10.
- PRINCIPLES AND PRACTICE OF OBSTETRICS**—By Joseph B. DeLee, M.D., Late Professor of Obstetrics and Gynecology, the University of Chicago; Consultant in Obstetrics, Chicago Lying-in Hospital and Dispensary; and J. P. GREENHILL, M.D., Attending Obstetrician and Gynecologist, Michael Reese Hospital; Obstetrician and Gynecologist, Associate Staff, the Chicago Lying-in Hospital; Chairman, Department of Gynecology, Cook County Hospital; Professor of Gynecology, Cook County Graduate School of Medicine. Ninth edition. W. B. Saunders Co., Philadelphia, 1947. Price, \$10.
- OBSTETRICAL PRACTICE**—By Alfred C. Beck, M.D., Professor of Obstetrics and Gynecology, Long Island College of Medicine; Obstetrician and Gynecologist-in-Chief, Long Island College Hospital, Brooklyn. Fourth edition. The Williams & Wilkins Company, Baltimore, 1947. Price, \$7.
- RADIOLOGY FOR MEDICAL STUDENTS**—By Fred Jenner Hodges, M.D., Professor and Chairman, Department of Roentgenology University of Michigan; ISADORE LAMPE, M.D., Associate Professor, Department of Roentgenology, University of Michigan; JOHN FLOYD HOLT, M.D., Assistant Professor, Department of Roentgenology, University of Michigan. The Year Book Publishers, Inc., Chicago, 1947. Price, \$6.75.
- 1946 YEAR BOOK OF GENERAL SURGERY**—Edited by Everts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.
- 1946 YEAR BOOK OF PEDIATRICS**—Edited by Isaac A. Abt, D.Sc., M.D., Emeritus Professor of Pediatrics, Northwestern University Medical School; Consulting Physician, Children's Memorial Hospital, St. Luke's Hospital and Michael Reese Hospital, Chicago; with the collaboration of ARTHUR F. ART, M.D., Associate Professor of Pediatrics, Northwestern University Medical School; Attending Pediatrician, Michael Reese Hospital; Attending Pediatrician, La Rabida Jackson Park Sanatorium; Consultant in Pediatrics, Chicago Board of Health, and Consultant in Pediatrics, Great Lakes Naval Hospital, Great Lakes, Illinois. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.
- 1946 YEAR BOOK OF PHYSICAL MEDICINE**—Edited by Richard Kovacs, M.D., Professor of Physical Medicine, New York Polyclinic Medical School and Hospital; Attending Physical Therapist, Manhattan State, Harlem Valley State, Columbus and West Side Hospitals; Visiting Physical Therapist, New York City Department of Correction Hospitals; Consulting Physical Therapist, New York Infirmary for Women and Children, Mary Immaculate Hospital, Jamaica, N. Y., St. Charles Hospital, Port Jefferson, L. I., Hackensack Hospital, Hackensack, N. J., and Alexian Brothers Hospital, Elizabeth, N. J., Senior Consultant in Physical Medicine and Medical Rehabilitation, Veterans' Administration. The Year Book Publishers, Chicago, 1947. Price, \$3.75.

BOOK REVIEWS

1946 YEAR BOOK OF GENERAL THERAPEUTICS

November, 1945-August, 1946

Edited by Oscar W. Bethea, Ph.M., M.D., F.A.C.P., Professor of Clinical Medicine, Tulane University School of Medicine (retired); Senior in Medicine, Southern Baptist Hospital; Consulting Physician, Charity Hospital; Member of the Revision Committee of the U. S. Pharmacopoeia 1930-1940; author of "Clinical Medicine" and "Materia Medica, Drug Administration and Prescription Writing." The Year Book Publishers, Inc., Chicago, 1946. Price, \$3.75.

The 1946 Year Book of General Therapeutics is a handy volume which every physician will find useful. Drugs and technics appearing in the literature for the year are presented in a concise and easily assimilated fashion with appropriate comment by the editor.

The present volume contains a fine selection of subjects, the section on penicillin and streptomycin being particularly valuable.

The book is small, neatly printed and bound, and has subject and author index as well as table of contents. It seems admirably designed as a "desk book" ready for reference.

J. W. C.

THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA

Thirteenth Revision

By authority of the United States Pharmacopoeial Convention meeting at Washington, D. C., May 14 and 15, 1940. Prepared by the Committee of Revision and published by the Board of Trustees. Official from April 1, 1947. Electrotyped and printed by Mack Printing Company, Easton, Pa. Copyright, 1947.

This is the thirteenth revision of the United States Pharmacopoeia and has been declared as official as of April 1, 1947. This volume is significant for the addition of many new drugs, the advantages of which were proved under war conditions. In-

cluded is a compendium of each drug giving both the English and the Spanish title. The committee of revision is to be congratulated for the preparation of this authoritative volume.

E. M. G.

THERAPEUTIC EXERCISE

By F. H. Ewerhardt, M.D., Assistant Professor of Physical Medicine, Washington University School of Medicine and Barnes Hospital, St. Louis, Missouri; and GERTRUDE F. RIDDLE, B.S., R.N., R.P.T., Instructor, School of Physical Medicine, St. Louis University School of Nursing, St. Louis, Missouri. Lea & Febiger, Philadelphia, 1947. Price, \$2.50.

This volume is an excellent primer for all students of physical education, occupational therapy and physical therapy. Sufficient basic physiology and anatomy is provided to afford a comprehensive background. The special application of therapeutic exercise covers weak feet, a weakness of the abdominal wall, scoliosis, re-education in patients afflicted by acute anterior poliomyelitis and spastic paralysis. Postural exercises and the special application of therapeutic exercise in medical conditions is discussed. The material presented has been used by the authors in their own class work and is highly recommended as a practical textbook in its particular field.

E. M. G.

FUNDAMENTALS OF CLINICAL NEUROLOGY

By H. Huston Merritt, M.D., Professor of Clinical Neurology, College of Physicians and Surgeons, Columbia University; Chief of Division of Neuropsychiatry, the Montefiore Hospital; FRED A. METTLER, M.D., Ph.D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University; and TRACY JACKSON PUTNAM, M.D., Professor of Neurology and Neurological Surgery, College of Physicians and Surgeons, Columbia University, New York. The Blakiston Company, Philadelphia, 1947. Price, \$6.

Merritt, clinical neurologist, Mettler, neuroanatomist, and Putnam, neurosurgeon, have pooled successfully their respective talents to produce a useful and interesting text. According to the authors' statement, they prepared the book . . . "with a view toward explaining the essential facts which any practitioner of medicine must know concerning the problems of disease of the nervous system commonly encountered in general practice." If the product does not fulfill their sanguine expectations, it is more the inherent difficulty of the task than ineptness on the part of the authors.

Part I describes the technic of examination. In the chapter on the motor system, the authors un-

fortunately perpetuate two errors. The radial periosteal reflex is described as such without noting that it is a muscle stretch reflex of the brachioradialis muscle, and not a "periosteal reflex." Further, in the discussion of the abdominal reflex, no mention is made of the deep abdominal reflex, and the superficial abdominal reflex is simply designated as the abdominal reflex. In chapter 4, electromyography is mentioned in passing as a help in differential diagnosis of facial spasms, yet electrical diagnosis is otherwise ignored in the text. The tabular segmental representation of muscles is hard to follow, and less useful than the conventional segmental plans found in other standard texts. The value of this section would be enhanced by the inclusion of sclerotomal diagrams.

The quality of the illustrations is generally excellent, but in certain of the colored line diagrams the colors representing functional components are difficult to follow with the result that the reader either ignores the diagram or develops eyestrain.

Part II is the anatomic diagnosis. The basic anatomy and physiology is well presented, with perhaps too detailed a treatment for those not especially concerned with diseases of the nervous system. The vascular anatomy and vascular syndromes are especially well handled. The clinical neurology is sound but too sketchy for adequate reference by the general man. The concluding chapter is an excellent summary of the cerebrospinal fluid in health and disease and of general interest.

The format is unusually attractive. The book is printed in ten point type on good quality non-glare paper, and is of a convenient size and weight. While I question the appeal of this text to the general man, it will be appreciated by the psychiatrist doing clinical neurology, the internist interested in neurologic problems, and all those desiring knowledge of the fundamentals of nervous diseases.

1946 YEAR BOOK OF GENERAL SURGERY

Edited by Evarts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.

The 1946 Year Book of General Surgery offers a concise review of surgery based on 349 leading articles of world literature.

The book deserves the attention of all general surgeons as it contains new data and many improved methods and technics which will be of immediate value.

Sections are presented on anesthesia and analgesia, asepsis and antisepsis, operative technic, wound healing and pathologic conditions, tumors, blood vessels, bones, fractures and 26 sections on operative technic by regions and organs.

H. G. E.

SOCIETY PROCEEDINGS

MEETINGS

Appanoose County

Members of the Appanoose County Medical Society elected the following officers for 1947: R. R. Edwards, president; F. B. Leffert, vice president; E. F. Ritter, secretary-treasurer; J. C. Donahue, delegate; E. A. Larsen, alternate.

Black Hawk County

The Black Hawk County Medical Society met at the Russell-Lamson Hotel April 1. Following a six o'clock dinner, Dr. Stuart Cullen, professor of anesthesia at the State University of Iowa, addressed the group.

Calhoun County

Dr. L. J. O'Brien of Fort Dodge was the principal speaker at the Calhoun County Medical Society meeting in Rockwell City March 27. He spoke on the ulcer-cancer problem of the stomach. Dr. D. C. Carver of Rockwell City presided at the meeting.

Johnson County

The Johnson County Medical Society met at the Hotel Jefferson, Iowa City, on April 2. Following a six o'clock dinner and the business meeting, Dr. George C. Albright of Iowa City gave a case report on "Aneurism of the Circle of Willis." Dr. A. L. Sahs opened the discussion.

Lee County

The Lee County Medical Society held its regular meeting March 26 at 2 p. m. in the Hotel Iowa, Keokuk. Dr. J. H. Randall of the department of obstetrics and gynecology of the State University of Iowa College of Medicine addressed the group on "Erythroblastosis-fetalis: Obstetrical Side of the Question."

Marshall County

The Marshall County Medical Society met at the Methodist Church in Marshalltown April 1. Dr. R. H. Flocks of the department of urology at the State University of Iowa College of Medicine spoke on "Cancer of the Bladder." He illustrated his talk with films.

Sac County

The regular monthly meeting of the Sac County Medical Society was held at Park Hotel in Sac City March 20. Following a 6:30 o'clock dinner a program was held at which Dr. Parker Hughes of Des Moines was guest speaker.

Scott County

Dr. Frederick C. Mackenbrock of Omaha was speaker at the dinner meeting of the Scott County Medical Society held April 1 at the Lend-a-Hand Club, Davenport. His subject was "Diagnosis and Treatment of Certain Diarrheal Diseases."

Worth County

At the recent annual meeting of the Worth County Medical Society the following officers were elected: Dr. S. S. Westly, president and delegate; Dr. G. S. Westly, secretary-treasurer; Dr. B. H. Osten, alternate.

Woodbury County

"Management of the Anemias" was discussed by Dr. Stanton W. Hardy of Pearl River, N. Y., March 27 at a dinner meeting of the Woodbury County Medical Society. The meeting was held in the Mayfair Hotel.

PERSONALS

Dr. Dean Clapsaddle spoke to the Lions Club of Clear Lake on March 20. He discussed fly control and how it might be effected through the concentrated efforts of towns, townships and counties.

Dr. T. G. Dulin of Sigourney spoke to members of the Parent-Teacher Association March 26 in behalf of the National School Health Services Act of 1947.

Dr. Arthur W. Erskine of Cedar Rapids recently appeared as guest speaker in a postgraduate course of the American College of Radiology in Philadelphia. Dr. Erskine is past president of the Radiological Society of North America and the Iowa State Medical Society.

Dr. Harry Frey, who was discharged February 19 after serving over three years in the Navy Medical Corps, has located in Grinnell. Dr. Frey was graduated from Hahnemann Medical College in 1918 and has practiced in Rock Island, Ill.; Holdenville, Okla.; and Fairfield, Iowa. He will limit his practice to diseases of the eye, ear, nose, and throat.

Dr. and Mrs. J. L. Fry recently moved to Cedarville, Ill., following Dr. Fry's retirement. He had served the Kalona community for thirty-two years, limiting his practice to office calls during the past year.

Dr. Jack T. Harris, formerly a member of the Watts Hospital staff in Marengo, began practice in

Luverne early in April. Unable to find a place to live in the former place, he accepted the offer of the Luverne business men who had purchased a house in order to attract a physician to that location.

Dr. K. M. Keane of Sioux City recently announced his association with **Dr. T. J. Houlihan** of Ida Grove in the practice of medicine. Dr. Keane is a graduate of the Creighton University School of Medicine, Omaha, and for the past year has served as house physician at the St. Joseph Hospital in Sioux City.

Dr. William Kinzle of Gladbrook has opened offices for the practice of medicine in Wellsburg. He was recently discharged from the armed forces.

Dr. H. L. Klockslem closed his offices in Story City recently and moved to Des Moines where he is now associated with Drs. Lovejoy, Thompson and Bond.

Dr. Edson C. Knight, who has been practicing in Garwin the past nine years, began practice in Marshalltown April 1. Dr. Knight has just completed a postgraduate course in surgery and gynecology at the Cook County Graduate School of Medicine.

Dr. W. E. Owen, son of Dr. and Mrs. W. R. Owen of Osage, has announced that he will begin a medical practice in St. Ansgar as soon as he can find a suitable home and office. Dr. Owen received his discharge from the navy Feb. 18, 1947.

Dr. Howard Rudersdorf is now assisting Dr. F. F. Null of Hawarden in his practice. Dr. Rudersdorf is a graduate of Creighton University of Omaha and served in the army during the war. Since his discharge he has been helping Dr. Fitzgerald of Sloan who was unable to practice because of a fractured hip.

Dr. H. B. Weinberg, who will be one of the doctors in charge of the new heart clinic for children operated by the Davenport Visiting Nurses Association, gave an interesting and instructive talk on rheumatic fever at the dinner meeting of the Pilot Club in Davenport March 26. A round table discussion followed the talk.

MARRIAGE ANNOUNCEMENTS

Buster-Slater

Miss Sarah Gwen Buster, daughter of Mrs. James M. Buster of Muscatine, became the bride of Dr. James L. Slater, son of Mr. and Mrs. C. J. Slater of Fresno, Calif., in a ceremony performed March 19 in the First Methodist Church, Iowa City. Mrs. Slater is a senior in the college of liberal arts at the State University of Iowa and Dr. Slater is a graduate of the College of Medicine. After a wedding trip Dr. Slater will go to Los Angeles, Calif., for internship where the couple will be at home after July 1.

Gilliland-Baker

Mrs. Virginia Gilliland and Dr. Charles J. Baker, both of Fort Dodge, were united in marriage March 29 at the Webster City Methodist Church. The bride is the daughter of Mr. and Mrs. Roy Baker of Fort Dodge and the groom is the son of William H. Baker of Piedmont, Calif. Mrs. Baker has been employed as office assistant to Dr. John Shrader. Dr. Baker has been practicing in Fort Dodge since 1938, with the exception of the years he served in the armed forces.

DEATH NOTICES

Brewer, Martin T., aged 74, of Des Moines, died March 27 at Veterans Hospital of a heart ailment following an extended illness. Dr. Brewer was graduated from Rush Medical College. He practiced in DeSoto until 1920, then moved to Des Moines where he continued his work until his retirement in 1940.

Carver, Harry Everette, aged 71, of Earlham died March 18 at the Veterans Hospital of a heart ailment. Before moving to Earlham in 1926, he practiced in Rose Hill and Oskaloosa, Iowa. He was graduated from the State University of Iowa College of Homeopathic Medicine, Iowa City, with the class of 1899, and at the time of his death he was a member of the Madison County and Iowa State Medical Societies.

Hess, William Clarence, aged 73, of Cresco died at his home April 6. He was graduated from the University of Illinois College of Medicine, Chicago, in 1901 and practiced in Bagley before moving to Cresco in 1908. Dr. Hess was a member of the Howard County and Iowa State Medical Societies.

Holmes, Wilson Warren, aged 78, died March 20 in Graham Hospital, Keokuk, following a very brief illness. A graduate of the Keokuk Medical College with the class of 1892, he had practiced in Keokuk since that time. He was a member of the Lee County and Iowa State Medical Societies.

Hubbard, Frank Albert, aged 82, of Columbus Junction, died March 21 in Bellevue Hospital, Muscatine, as a result of injuries suffered in a fall at his home earlier in the day. Dr. Hubbard, who was graduated from the Keokuk Medical College in 1895 and had practiced in Columbus Junction 51 years, was a life member of the Louisa County and Iowa State Medical Societies.

Woods, Herbert Carlton, aged 77, of Tama, died April 5 at Marshalltown following a major operation. Dr. Woods was graduated from the Hahnemann Medical College and Hospital, Chicago, with the class of 1894. He practiced in Hazleton, Maynard and Fayette before coming to Tama in 1906. At the time of his death he was a member of the Tama County and Iowa State Medical Societies.

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No. 6

UTERINE BLEEDING*

Grandison D. Royston, M.D., St. Louis, Mo.

Uterine bleeding occurs normally only in connection with menstruation and childbirth. In this latitude menstruation begins normally between the ages of 11 and 17 years, recurring more or less regularly every twenty-one to thirty-five days and lasting one to eight days. The daily amount of flow averages enough to soil moderately three to four vulval pads, a total flow of 50 to 250 cc. Curtis estimates the average amount of actual blood loss is from 20 to 70 cc. The menopause or normal cessation of menstruation occurs between the ages of 42 and 50 years. If it occurs between 35 and 42 it is called "early menopause," while prior to 35 it is called "premature menopause."

Every woman is a law unto herself regarding her menses. The variation from the normal for that particular individual is the crux of the problem and may indicate the presence or absence of a pathologic process.

Accurate history taking is of the utmost importance in the care of female patients of whom written records should always be kept. Next to the chief complaint for which medical care is sought, the history of the date and character of the last one or two menstrual periods gives the most important information. Both patients and physicians are much too indifferent to genital bleeding; hence, there is too little realization of its direct and indirect results.

Maternal mortality statistics indicate that hemorrhage is probably the most important single cause of death, either directly from blood loss or indirectly by predisposing to complications such as infection, embolism, etc. A recent analysis of maternal deaths shows that an average of five to seven hours time elapsed between the first recognizable hemorrhage and subsequent death. Such negligence in treating hemorrhage and its logical sequence of infection in this day of plasma and

blood transfusions and of antibiotic therapy seems inexcusable.

Menorrhagia or excessive uterine bleeding at the menstrual cycle may be organic or functional, being more often associated with benign conditions. Metrorrhagia or intermenstrual bleeding, however scant, is always pathologic, and at any age causes suspicion of malignancy which must be excluded. The most common cause of metrorrhagia and the one most often overlooked during the childbearing age is some complication of pregnancy, which must be excluded in every case.

"Gushing" bleeding is characteristic of only four affections: abortion, cancer, submucous fibroids, and certain cases of disturbed ovarian function with palpable ovarian pathology, mostly in association with fibroids.

Emphasis is placed upon the following important points to be borne in mind: (1) Pregnancy complications during the childbearing age are common possibilities, regardless of the social condition of the patient and the symmetry or asymmetry of the uterus. (2) While abortion of an intra-uterine pregnancy during the first month of gestation is unusual, Baisch reports that 25 per cent of ectopic pregnancies terminate during this early period. Tubal pregnancy can rupture before a menstrual period has been missed. Pregnancy tests may be negative within forty-eight hours after fetal death but are useful in differentiating the pregnant uterus from tumors, while in late pregnancy x-ray demonstration of the fetal skeleton is valuable. Like all laboratory tests, they should not supersede careful clinical study. Negative reports are of less value than positive findings. (3) The chief value of the patient's statement is when it coincides with the findings, signs and symptoms after a careful examination. (4) The presence of a cervical polyp or uterine fibroid does not preclude the possibility of cancer being present. (5) Abnormal bleeding near and always after the menopause is a danger sign. Malignancy must be excluded by bimanual palpation, direct inspection through a vaginal speculum, usually a

*Presented before the Ninety-sixth Annual Session, Iowa State Medical Society, Des Moines, April 16, 17, and 18, 1947.

diagnostic curettage of the entire endometrium, and often a cervical biopsy. All tissue removed should be submitted to a competent gynecologic pathologist. (6) No patient past 30 should be submitted to hormone therapy by the internist or irradiation by the roentgenologist without a preliminary pelvic examination, diagnostic curettage and possible cervical biopsy as above advised.

In a recent article, Norman Miller, one of our leading authorities on the subject, posed the question as to whether hysterectomy is a therapeutic necessity or a surgical racket. This question was raised by his study of 246 hysterectomies in ten different hospitals, among whom some 33 per cent of the cases either had no disease or else disease contraindicated the hysterectomy. This indictment of "knife happy" physicians is in accord with the experience of other gynecologists, particularly those with experience among patients in free clinics and municipal institutions where perhaps one-third of the gynecologic patients admitted have had a previous and unsatisfactory pelvic operation. Medical schools are not blameless for this state of affairs, since medical students receive their scant gynecologic training mainly on house cases. Of these nearly every patient is an operative case whereas not more than 4 to 15 per cent of the applicants for treatment should fall within this category. That hysterectomy is of the greatest value goes without saying, but indications for the operation are of far greater importance than the technical procedure itself. Professor Leopold of Leipzig has said, "The operation—any carpenter can do that; the diagnosis is the main thing."

In an effort to try to present the conditions ordinarily causing uterine bleeding, they are grouped and presented in the following charts.

(Pelvic inflammatory disease is purposely omitted.)

The so-called "normal" menstruation often accounts for anemia, more marked than suspected; hence, female patients need more blood counts and prompt correction of any anemia found. Anemia often accounts for many subjective complaints, and a low blood picture out of proportion to the actual blood loss may suggest malignancy. Long continued abnormal bleeding may cause a woman to lose the ability to regenerate and replace this loss with new blood.

Treatment consists of blood transfusions (1,200 cc. are needed to raise the red blood cell count one million per cubic millimeter); iron (three citrate of iron capsules daily or feosal, two tablets morning and afternoon); sol. liver extract (Armour and Co.), $\frac{1}{2}$ oz. two or three times daily, antianemic diet, vitamins B, C, E, and K may

CHART I

Uterine Bleeding

Diagnosis of cause and source of bleeding is imperative.

I. CAUSES:

A. Constitutional or systemic.

1. Anemia—causes deficient clotting and retards other organic functions.
2. Dietetic deficiency—depresses other organic functions. Vitamin B deficiency impairs ability of liver to inactivate estrogens—hence excess level. Vitamin C deficiency predisposes to capillary hemorrhage. Vitamin E deficiency is associated with impaired genital function. Vitamin K deficiency is associated with low prothrombin, with lessened coagulability.
3. Any systemic condition producing ascites or passive congestion.

B. Endocrine or functional

1. Endocrine imbalance, including pubertal or prepubertal phases, injudicious hormone administration and menopausal phase, after diagnostic curettage and possible biopsy.
2. Hypothyroidism.

II. DIAGNOSIS: by

- A. Physical examination, accurate history of menses and medication.
- B. Laboratory tests (blood study, B.M.R., chemical and biologic assay, vaginal smears for cytologic changes, vaginal pH, diagnostic curettage and biopsy study).

III. TREATMENT:

- A. Treat underlying condition.
- B. Hygienic—diet, vitamins B, C, E, K.
- C. Specific medication—iron, liver extract, blood transfusions.
- D. Aids to treatment—moccasin venom.
- E. Hysterectomy.
- F. Irradiation (always preceded by diagnostic curettage).
- G. Hormonal—thyroid, estrogen, progesterone, testosterone, gonadotropins, alone or in combination.

be indicated; abundant rest and sunlight, often thyroid extract 1 gr. of the desiccated gland daily for every minus 10 per cent. The B.M.R. is not absolutely reliable as a guide for thyroid therapy. McCollum has shown that the ovary is particularly sensitive to nutritional deficiencies. Recent studies indicate the liver apparently is intimately concerned with the metabolism of female sex hormones. Prothrombin formation occurs in the liver. The treatment of other constitutional or systemic causes of uterine bleeding is the generally accepted treatment of the underlying conditions. In case of doubt or if the patient fails to show speedy improvement, the help of a competent internist should be sought.

Endocrine or functional causes are mainly due to some imbalance of endocrine function. It may involve one or several hormones. Endometrial hyperplasia is almost invariably a manifestation of disturbed activity of the ovaries or of other glands of internal secretion. The immediate cause of endometrial hyperplasia is excessive stimulation with estrogen, and if postmenopausal the adrenals or pituitary gland substitutes for the ovary. A granulosa cell tumor may be palpable in the woman with postmenopausal endometrial hyperplasia. Uterine bleeding may occur from a histologically "normal" or even from an atrophic endometrium. Functional bleeding is most common during adolescence and just before and during the menopausal years when the endocrine glands are undergoing considerable readjustment. Novak feels that it is

nearly always due to failure of ovulation when the persistent follicles act continuously upon the endometrium without any progesterone influence.

The ovary normally has two hormones, estrogen and progesterone. Estrogen is produced by the maturing follicle, then by the corpus luteum and later by the placenta. It is a growth hormone, especially of the genitalia, increases hyperemia and is responsible for the normal rhythmic activity of uterine musculature, appearance of menstrual periods, etc. Progesterone is produced by the corpus luteum and is present only after ovulation exerts its effect upon an endometrium already built up by estrogen, producing the secretory or progestational phase before the onset of menstruation. It is the normal inhibitor of the characteristic uterine muscular contractility. It is important though not indispensable to maintain pregnancy.

The anterior pituitary gonadotropic sex hormones dominate the functional activity of the ovary through their two hormone principles, one a follicle-ripening principle and the other the luteinizing hormone. The withdrawal or sudden diminution of either estrogen or progesterone is thought to cause menstrual bleeding. The widespread practice of administering estrogenic substances has resulted in many instances of uterine bleeding. Since these substances are often given to women at an age when cancer most commonly appears, symptoms of the latter disease may be obscured. It is felt that the long continued administration of this "growth" hormone may stimulate growths. It should never be given for longer than three or four weeks without being followed by a rest period of ten days, during which latter time sedatives may be substituted. It often causes postmenopausal bleeding. It should not be given to women who have been castrated (either surgically or radiologically) for endometriosis, to those who have had cancer of the breast, to those in whom it produces irregular bleeding, or to those who experience no improvement in symptoms.

Injectations of estrogens encourage too much introspection on the part of the patient and should be limited to the minimum. Watson feels that estrogens are habit-forming.

Estrogen is best given orally as diethylstilbestrol, termed stilbestrol in this article, as estrone sulfate (premarin), or as amniotin vaginal suppositories. The addition of methyl testosterone (metandren linguets) mg. v morning and evening to stilbestrol, 1 mg. daily, is more effective than estrogen alone in treating menopausal symptoms and is less likely to cause increased uterine bleeding. As soon as the desired effect is obtained, the dose should be decreased and the intervals length-

ened, thus giving the least amount that will control the symptoms. Mild sedation and abundant open air activity for occupational therapy, as well as thyroid extract to keep the basal metabolism to or slightly above 0 per cent, are valuable and often superior to the estrogens for the relief of menopausal symptoms.

Many women with functional bleeding are more or less hypothyroid, and it is in this group that thyroid therapy is most effective. Thyroid is one of our most dependable aids and is thought to have the power of stimulating and regulating the other endocrines.

The various tests and assays at present have more value in investigative work than in clinical application. The pregnancy tests are of great value when positive, though a negative test is less conclusive. Pregnancy tests should not be taken earlier than fourteen days after the menses are overdue. The anovulatory endometrial biopsy taken immediately before or at the onset of menstruation denotes lack of progesterone activity and often absence of ovulation. However, such a finding must be constantly present. Dysmenorrhea seldom occurs in the absence of ovulation. An examination of the entire curetted endometrium is of more value for study, especially since the tiny bit of tissue obtained with a biopsy suction curet may easily miss an early localized corpus cancer.

Basal metabolic rate determinations are indicated in every case of abnormal bleeding and also for regulating thyroid dosage. The writer has found it helpful to teach the patient to count her basal pulse (counted for sixty seconds on awakening, twice weekly) and keep a written record of same. High blood cholesterol findings may indicate low thyroid function.

The treatment of functional bleeding is first and foremost making an accurate diagnosis and excluding pathologic lesions, especially malignancy. This is necessary before instituting any kind of treatment. Thyroid medication, high vitamin diet with other hygienic measures, correction of constipation, and anemia are often indicated. Among the vitamins, B₁ (thiamin chloride) given in doses of 30 to 60 mg. daily is said to be one of the most dependable aids to liver function in inactivating estrogen. All hormone therapy seems too expensive to the patient at the present time, the costs ranging from 1 to 2¢ per mg. for oral stilbestrol to \$2.35 per dose for the intramuscular injection of 25 mg. of Testosterone Propionate and \$4.00 for a 5 mg. dose of Estradiol Dipropionate. The popular modes of hormone therapy today are the use of thyroid gonadotropins, estrogens, progesterone, either alone or in combination,

and the androgens, either alone or in combination. Progesterone therapy is termed chemical curettage by Greenblatt.

Willard Allen employs either progesterone mg. x intramuscularly daily for approximately six doses, preferably given during the week immediately preceding the expected menstruation. In other cases, he gives stilbestrol mg. iii to vi orally for two to three weeks in each month. At times, he employs combinations of these hormones, though usually preference is given to either progesterone or to the synthetic estrogen, stilbestrol. Hamblen advocates either of the following methods of securing hemostasis during active bleeding: in the woman of 35 or older or where bleeding is unusually brisk, immediate curettage for biopsy study and prompt hemostasis; or estrogen orally in the form of estrone sulfate (premarin mg. 1.25 tablets) three times daily for twenty days. During the last ten days of this treatment, anhydrohydroxyprogesterone (Pranone) mg. x is given orally three times daily. If bleeding recurs before the twenty days of treatment have ended, treatment is discontinued and resumed on the fourth or fifth day of bleeding, as the second series of treatments, which is given similarly to the first series. His usual dose for hemostasis is twice the dosage above mentioned, or two tablets of estrone sulfate three times daily (mg. 7.5) and sixty mg. of pranone orally during the first cycle of 20 days. He emphasizes that the proportion of estrogen to progesterone is in the ratio of 1 to 8. These cycles are repeated three or four times when he reports that the relief is permanent in most instances. Novak also employs estrogens, progesterone, pregnant urine hormone, and the androgens. He feels that he has obtained best results from pregnant urine hormone in doses of 200 to 500 units intramuscularly daily for six to eight days from the onset of bleeding, or from androgens in the form of testosterone propionate mg. x to xxv intramuscularly twice weekly, not to exceed 50 mg. a week. Testosterone inhibits ovarian function.

Curtis advises methyl testosterone (metandren linguets) mg. v dissolved beneath the tongue twice daily. This latter has impressed me favorably although my experience with it is very limited. It is advised that this dosage be taken ten to fourteen days before the day of expected menstruation. When the total dose of androgen exceeds 300 mg. in one month, a tendency to masculinization may appear, though it disappears when treatment is discontinued.

Ascorbic acid (200 mg. daily) seems of value in the "spotting" from capillary hemorrhage.

Occasionally good results follow the administration of Moccasin Venom 0.4 cc. diluted 1/3,000 and injected intramuscularly twice weekly, gradually increasing the dose to a maximum of 1 cc. It is painful, and the results are not always dependable. All authorities agree concerning the effectiveness of radium. However, in young women with *intractable* bleeding, a diagnostic curettage followed by an intra-uterine dose of 200 to 300 mg. hours of radium will usually control the bleeding, but fertility is lessened and there is danger of destroying menstrual function. Irradiation of young women for functional bleeding is now largely replaced by hormonal therapy. Treatment with irradiation in women 44 years of age or older is always preceded by a diagnostic curettage, and usually an amenorrheal dose of 1,800 to 2,000 mg. hours of radium will be needed. Irradiation should not be used in emotionally unstable women or those who fear radium. In such patients and among younger women with *intractable* bleeding hysterectomy is preferable to heavy irradiation, having less objectionable after effects since the ovaries may be saved.

CHART II

Bleeding in Pregnancy

- I. CAUSES:
 - A. Threatened abortion.
 - B. Retention of products of conception.
 - C. Placenta previa.
 - D. Premature separation of placenta.
 - E. Ectopic pregnancy.
 - F. Chorioepithelioma.
- II. DIAGNOSIS: by
 - A. Accurate history.
 - B. Careful physical and pelvic examination.
 - C. Signs and symptoms of shock and internal hemorrhage.
 - D. Biological tests of pregnancy, if time permits.
 - E. X-ray of chest for chorioepithelioma metastases.
- III. TREATMENT:
 - A. For threatened abortion:
 1. Absolute bedrest and sedatives for at least 3 days after cessation of threat to abort, diet, bedrest at menstrual epochs.
 - B. For retention of fragments:
 1. Pituitary and ergonovine injections, hot douches, occasionally packing, careful evacuation of retained fragments.
 - C. For placenta previa:
 1. Hospitalize until delivered, individualize as to packing, premature rupture of membranes, intra-ovular bag, version, forceps, Caesarean section, blood transfusions.
 - D. For premature separation of placenta:
 1. Early delivery with minimum shock and loss of blood, plasma, blood transfusions, at times packing uterus, hysterectomy.
 - E. For ectopic pregnancy:
 1. Early salpingectomy and transfusions.
 - F. For chorioepithelioma:
 1. Blood transfusions, hysterectomy, at times excision of vaginal metastases, irradiation.

Complications of pregnancy are the most common causes of bleeding during the childbearing age. Since fetal death often precedes the first threat to abort and since many abortions result from developmental abnormalities, there is little indication for other therapy than absolute bedrest, sedatives, and a high vitamin diet. Progesterone mg. x to xx daily intramuscularly until fetal movements occur may control the threat to

abort, though this therapy is expensive and not always a cure. The oft repeated statement that spontaneous abortion is usually complete and curettage is rarely indicated has not been in accord with my experience. In the Washington University Clinic curettage of noninfected abortion patients has resulted in shorter hospitalization, lessened blood loss, better involution, and lessened tendency to abort in subsequent pregnancy. Retained products of conception should be gently evacuated, and if there is any suspicion of infection, 30,000 units of penicillin and 200 units (0.2 gm.) of streptomycin should be injected intramuscularly every three hours night and day through the use of different syringes.

Placenta previa is usually present when apparently causeless, painless uterine bleeding occurs in the last trimester of pregnancy. The diagnosis is confirmed by vaginal palpation of placental tissue. Vaginal palpation should be done with extreme caution, and then only in a hospital under conditions of surgical asepsis with everything ready for any eventuality—rupture of membranes, packing to control hemorrhage, version, abdominal section, parenteral fluids, plasma and preparations for blood transfusion. Whenever the placental margin is easily palpated, rupture the membranes; consider the intra-ovular insertion of a number 5 Voorhees bag or possibly podalic version to control hemorrhage. When only placental tissue is palpable with the cervix dilated two finger breadths, consider the case as a central variety of previa. Do abdominal section in all complicated cases and central varieties of previa as well as in many partial varieties in primigravidae; give ample blood transfusions, enough to keep the blood count within normal limits. Never underestimate the importance as well as the dangers of blood loss. The author has never used Willett forceps since less traumatizing measures may be used to cope with the condition.

Premature separation of the placenta occurs about once in 250 deliveries. It is one of the most dangerous complications of pregnancy. The cause is unknown. About one-half show toxemia while one-fourth have concealed hemorrhage, more often from higher implantations. The onset is usually sudden and stormy, near term or early in labor, with severe constant pain; bleeding, at first concealed, later external, with shock out of all proportion to the amount of hemorrhage; maybe steadily increasing size of the uterus; unrelaxed condition between pains and extreme tenderness to palpation. Symptoms vary: (1) hemorrhage, usually external but possibly concealed; (2) shock; (3) local pain and tenderness; (4) anemia.

The uterine consistence is firm and boardlike if the hemorrhage is concealed. Fetal movements usually cease after severe hemorrhage. The placenta is ordinarily delivered with the infant. At times in partial placental separation the diagnosis is impossible until after delivery. The prognosis is very serious. Many mild forms of partial separation escape notice. Treatment depends upon the stage of labor, efficiency of uterine contractions, gestation period, and any disproportion or infection—actual or potential. It consists of: (1) watchful waiting—only in very mild cases and these are often not recognized; (2) rupturing membranes, if possible, to lessen uterine distention and expedite labor in mild cases, forceps or version to shorten second stage; (3) applying compression bandage in mild cases—again usually not recognized; (4) inserting a number 5 Voorhees bag (after rupturing the membranes) in the effaced cervix with considerable dilatation and soft margins, followed by version or forceps; (5) control of shock and hemorrhage; and (6) performance of abdominal section if the cervix is closed or resistant, followed by packing of the uterus if it is contractile or hysterectomy if it is infiltrated with blood and contractility is lost. Transfuse early and often as needed.

Ectopic pregnancy cannot be accurately diagnosed prior to tubal rupture or abortion as it produces no symptoms until that time. There is usually a history of abnormal bleeding different from the normal flow. The patient has pain different from any ever before experienced and may have associated dizziness. The uterus often feels like an early intra-uterine pregnant uterus. There may or may not be a palpable adnexal mass until after a hematoma forms. After signs and symptoms appear manipulation of the cervix with only the internal examining finger causes more or less pain. The blood picture may show an early leukocytosis. There are signs and symptoms of shock and internal hemorrhage depending upon the extent of the hemorrhage. Tubal rupture usually occurs within the first six weeks and may even appear before the first period has been missed. Here signs and symptoms of shock and internal hemorrhage are of the utmost importance. Tubal abortion, which is more common, usually occurs between the second and the fourth months and is less fulminating. Occasionally aspiration of the cul-de-sac mass or colpotomy may be of diagnostic aid. Treatment in either case is salpingectomy, usually with blood transfusion begun at the time the abdomen is incised. Appendectomy should not be done at the time of caesarean section or of operation for ectopic pregnancy, as opening the bowel lumen in the presence of free blood in

the peritoneal cavity increases maternal dangers through greater vascularity and lymphatic distribution associated with pregnancy. Biologic pregnancy tests do not differentiate extra-uterine from intra-uterine pregnancy, and they are usually absent shortly after the death of the embryo. The corpus luteum of pregnancy may be mistaken for a tubal pregnancy. The occasional correctly guessed unruptured tubal pregnancy does not justify the more frequent incorrect diagnosis and an unnecessary operation.

Chorio-epithelioma is rare. It often follows hydatidiform mole, although only a small number of moles are followed by chorio-epithelioma. Patients who have expelled moles should have repeated pregnancy tests made which should become negative within five or six weeks after expulsion of the mole. Should this test remain positive and the Brindeau-Hinglais quantitative blood serum test for gonadotropic substance show a marked increase beyond the normal 5,000 to 15,000 mouse units per cc., chorio-epithelioma should be suspected. Symptoms are profuse uterine bleeding and early hematogenous metastases in the vagina, lungs, and other organs. Bilateral lutein cysts are common. The diagnosis should be made by both laboratory and clinical study; when confirmed radical removal of the genitalia and accessible vaginal metastases are indicated, even in the presence of moderate involvement of distant organs. Intra-uterine radium 2,400 to 3,600 mg. hr. dose one to four weeks prior to operation followed by postoperative x-ray is believed by some to be indicated, since these tissues are particularly sensitive to irradiation.

CHART III Benign Tumors of the Uterus

- I. CAUSES:
 - A. Cervical or endometrial polyp, fibroids, adenoma, adenomyosis, adenomyoma.
- II. DIAGNOSIS: by
 - A. History.
 - B. Bimanual palpation.
 - C. Inspection through a vaginal speculum.
 - D. Diagnostic curettage with or without biopsy, with examination under narcosis.
- III. TREATMENT:
 - A. Snare or cauterize cervical polyp with biopsy; often diagnostic curettage.
 - B. Myomectomy.
 - C. Hysterectomy, removal of any abnormal cervix if possible.
 - D. Irradiation, only in women of 44 years or older with uterus no larger than 14 weeks gestation; always preceded by a diagnostic curettage; not suited to submucous myomata or those infected, or with symptoms of degeneration.

In benign tumors of the uterus, bleeding, usually menorrhagic, may be from the congested tumor or uterus, or it may be induced by the hyperfunctioning enlarged ovaries often associated with fibroids. Submucous fibroids may be associated with metrorrhagia more often than the other varieties, though even here menorrhagia is

their most characteristic sign. Polypoid myomata are characterized by two pathologic features: (1) free bleeding with gushing, and (2) tendency to necrosis. Adenomyosis is the diffuse infiltrating glandular extension into the myometrium, while adenomyoma is the more discrete form, though also diffuse and with larger involvement of the same process. These endometrial glands honeycomb the uterus and menstruate but are poorly drained. There is often associated endometrial hyperplasia and polypi. The ovaries, intestines, and pelvic peritoneum may be involved in this endometriosis which is characterized by the findings of inflammation without infection and the periodicity of symptoms.

Cervical polypi rank next to cancer as a cause of postmenopausal cervical bleeding. These conditions may co-exist in the same patient. Endometrial polypi are often of endocrinic origin, but they also develop in association with myomata, especially submucous and less often intramural varieties. Probably 80 per cent of all fibroids cause no symptoms and require no treatment except observation every few months. Common indications for operation for fibroids are increased growth, increased pain and increased bleeding.

CHART IV Malignant Tumors of the Uterus

- I. CAUSES:
 - A. Unknown; chronic irritation and persistent endometrial hyperplasia probably are factors.
- II. DIAGNOSIS: by
 - A. Symptoms
 1. Discharge is earliest symptom.
 2. Bleeding is most alarming symptom.
 3. Pain is worst symptom and means that the stage of curability is past.
 - B. History of metrorrhagia, and especially bleeding after trauma or menopause.
 - C. Bimanual palpation and inspection for induration, vascularity, and friability.
 - D. Chrobak-Clark test (gently probing canal causes active bleeding, etc.).
 - E. Schiller test and colposcope reveal suspicious areas to be biopsied.
 - F. Diagnostic curettage and biopsy of excised tissue (not by cautery).
 - G. Blood studies and at times studies of the urinary tract.
- III. TREATMENT:
 - A. Irradiation of cervix cancer.
 - B. Hysterectomy and bilateral salpingo-oophorectomy of corpus cancer.
 - C. Irradiation often before and usually after operation.
 - D. At times surgical diathermy, acetone locally, blood transfusions, hygienic measures, presacral sympathectomy, chordotomy, analgesics.

Outside of pregnancy complications, metrorrhagia is usually due to malignancy or to necrotic polypi, most commonly involving the cervix. Corpus cancer also has metrorrhagia, but the bleeding is usually less severe than that from the cervix. All postmenopausal bleeding is metrorrhagic or irregular. It demands immediate and thorough investigation to rule in or to rule out cancer of the cervix and of the corpus, polypi, and degeneration of fibroids. In malignant tumors of the uterus, bleeding is metrorrhagic or irregular, often traumatic and gushing. Cervix cancer has three

physical characteristics: induration, vascularity, and friability. It begins as a local lesion, though 5 to 50 per cent have metastases when symptoms first appear. Cancer within the cervical canal is less frequent but more invasive, and being concealed, is often advanced when the diagnosis is made.

Corpus cancer rarely occurs before the age of 40. It is most often a postmenopausal condition and progresses less rapidly than the other varieties. About two-thirds of all postmenopausal uterine bleeding is due to malignancy, most often of the corpus, and must be so considered until definitely disproved. There is discharge, soon blood tinged; often some obstruction in the cervix or uterine cavity; contact bleeding; and often a slightly enlarged uterus. A diagnostic curettage and biopsy enable the diagnosis to be made. If the uterine scrapings are scant or moderate in amount, soft and velvety in character, they are usually benign, whereas curettings of large friable masses associated with free bleeding usually indicate malignancy. A diagnostic curettage is indicated routinely in all operations on women in the cancer age.

Sarcomata are seldom recognized. They are usually accidentally discovered during operations for fibroids with which they are often associated. Bleeding, usually profuse, with or without sudden increase in the size of uterine fibroids is the first symptom of sarcoma. Pain, though a late symptom, occurs much earlier than in carcinoma. They are softer and more vascular, and extension to distant organs have only too frequently occurred before local symptoms first bring the patient for examination. Only by routine pelvic examinations in every woman past 30 years of age every six months and after every abortion, labor, or infection, with careful study and adequate treatment can cancer deaths be reduced. Chronic cervicitis and the bleeding uterus must be properly treated. Every suspicious or doubtful case should have a biopsy by knife (not by cautery) and curettage of the entire uterine cavity. All tissue removed should be sent with a history of the case, including site of removal, to a competent pathologist for diagnosis.

Cervix cancer is best treated by deep x-ray given daily for sixteen days through four fields to clean up infection and followed by intra-uterine radium 3,000 to 4,000 mg. hr. dose, and 2,000 mg. hrs. of intravaginal radium. Radium is best applied in multiple small tubes properly screened. Try to limit each tube of radium to no more than a 600 to 750 mg. hour dose per tube in order to avoid necrosis. A word of warning is sounded

against hysterectomy for the patient who has had extensive intravaginal irradiation for cervix cancer. The resultant sclerosis heals poorly, and a vesico-vaginal fistula may occur through the slough when hysterectomy is done. Clinics report an average of 6 to 9 per cent of cervical cancers are found in the cervical stump left after hysterectomy. Hence, complete hysterectomy which consists of removing the entire cervix is usually preferable to any supravaginal amputation.

When a solid ovarian tumor, particularly one with surface papillary excrescences, is removed, it is often advisable to remove the complete uterus together with the adnexae of both sides. Uterine bleeding due to ovarian tumors is usually caused by circulatory interference or malignancy.

Postmenopausal bleeding in a woman with endometrial hyperplasia and an ovarian tumor suggests a granulosa cell tumor, often malignant, and calls for removal of all genital organs. These tumors also occur in younger women in which, if the other ovary appears normal, removal of only the tumor is indicated. Since these tumors secrete estrogen, hormonal assays of estrogen in the blood and urine may be checked from time to time to determine that there is no recurrence.

CHART V

Other Diseases of Uterus and Vagina

- I. CAUSES:
 - A. Retrodisplacements, including descensus and prolapse, especially associated with ovarian congestion or with ulceration of the prolapsed uterus.
 - B. Subinvolution (common), chronic metritis (rare), hypertrophy (rare).
 - C. Varicosities of the broad ligaments.
 - D. Senile vaginitis.
- II. DIAGNOSIS:
 - A. By palpation and inspection while recumbent, at rest, straining and standing.
 - B. Often diagnostic curettage and biopsy and examination under narcosis.
 - C. At times therapeutic test of postural exercises (knee-chest, monkey trot, mule kick) or of suitable pessary.
- III. TREATMENT:
 - A. Operative correction of displacements, causing symptoms.
 - B. Curettage, more often diagnostic than permanently curative.
 - C. Irradiation, always after diagnostic curettage, and usually in older women.
 - D. Hysterectomy.
 - E. For senile vaginitis, cod liver oil, Vitamin A, B; Dil HCL, estrogen orally and by vaginal suppository, maintain vaginal acidity.
 - F. For subinvolution, bedrest, hot douches, prophylactic pessary, pituitary extract:—ergonovine, curettage.

Retrodisplacements of the uterus cause bleeding from passive congestion of the uterine vessels but more so from the disturbed function of associated prolapsed ovaries, which causes most of the symptoms.

Congenital uterine displacements, characterized by the long cervix, small corpus, short anterior vaginal wall and shallow fornix with other evidences of tardy development, cause few if any symptoms due to the displacement.

Acquired displacements are often associated with childbirth injuries, subinvolution, prolapsed

ovaries, varicosities, more or less uterine prolapse, etc., and often cause symptoms of bleeding and pelvic pressure. Holding forward the replaced uterus with a properly fitted pessary may relieve symptoms and serve as a diagnostic aid. If all symptoms are relieved while wearing the pessary and they then recur when the pessary is removed, proper surgical correction should give permanent relief. Operations that disturb normal ovarian blood supply and especially ovarian resections are often followed by premature and persistent menstrual disturbances.

Loss of tone in the uterine musculature with insufficiency of uterine contractions plays an important role in the absence of any other demonstrable anatomic lesion. This is particularly true of debilitated women and in those who have had rapidly repeated pregnancies in whom subinvolution is often found.

Subinvolution, or failure of the uterus to return to its former state after pregnancy, results from passive congestion from any cause, but certainly acquired retrodisplacements are important factors. The latter are often associated with other lesions of trauma from childbirth. Prevention is best early after labor. Krebs advised retaining the uterus forward with a "Findley" collapsible pessary inserted on the fourteenth postpartum day and keeping the uterus anteфлекed until involution is complete six to ten weeks after delivery. Roblee's No. 11 veterinary capsule of 20 per cent boric acid and 80 per cent beta lactose is inserted into the vagina every alternate night beginning fourteen days after delivery to maintain normal vaginal acidity and heal the traumatized cervix, erosions, etc. Should active bleeding from the noninfected puerperal uterus persist for longer than three weeks, careful curettage is followed by the best involution. Subinvolution is helped to some extent by curettage up to the end of the first year after labor, although the earlier it is done the more effective is the treatment. In subinvolution, much muscle tissue is replaced by connective tissue; hence, muscular contractility is lessened with lessened hemostasis. Ergot seems of value in uterine bleeding only when the latter is associated with pregnancy.

Descensus of the uterus is of varying degree, and when completely prolapsed may have decubitus ulcers. Prior to operation stilbestrol mg. x intramuscularly followed by stilbestrol mg. v orally every day for three or four days prior to operation will quickly heal these ulcers temporarily—long enough to permit repair.

Suspension operations should utilize the sacro-uterine ligaments to direct the cervix upward and

backward, be preceded by curettage, and be combined usually with a repair of the pelvic floor. Such suspended uteri seldom recur after labor.

Chronic metritis is rare and is associated with an infectious process. Hypertrophy of the uterus is also rare and is often associated with some displacement or obstruction that forces the uterus to do more work to expel menstrual blood.

Senile vaginitis is an atrophic condition in which the vaginal wall is thin and bleeding is scant. It responds well to estrogen in the form of amniotin vaginal suppositories and at times to additional oral administration of stilbestrol. Should estrogen produce uterine bleeding it may be combined with small doses of methyl testosterone by mouth. Recurrences are not uncommon but respond well to estrogenic therapy. Deficiencies of vitamins A, B, and D and achlorhydria must be excluded or corrected. Cervical erosions and eversions that bleed on contact call for a biopsy.

Conclusions reached in this presentation may be summarized as follows:

Uterine bleeding is always important and may be greater in amount than suspected. In the obstetric patient it may denote threatened abortion, incomplete abortion or retained placental fragments, infection, dangers associated with extra-uterine pregnancy, placenta previa, or premature detachment of the placenta, chronic subinvolution, and complications invited by anemia.

In the gynecologic patient it may denote functional or organic disease. Organic disease must always be excluded before the condition can be considered functional.

Functional bleeding is most common in the age groups below 30 and in those between 40 and 50 when hormonal adjustments are most common. Since the latter age group is also the common period of malignant change, it is safer to consider such conditions malignant until definitely ruled out by careful study.

Functional bleeding in the younger age groups is usually controllable by hormonal therapy and general hygienic measures. In women near the menopause, a diagnostic curettage followed by intra-uterine radium gives best results in most instances while conservative surgical care is indicated in properly selected cases.

Despite the low postoperative deaths of 1.6 per cent in the Miller series as compared with 0.6 to 4.64 per cent postoperative mortality in the literature, an analysis of these case reports failed to justify the frequency of the hysterectomies. The analyses by Norman Miller show the urgent need for much more accurate study and diagnosis before any operation is performed on any woman.

RECENT ADVANCES IN THE MEDICAL AND SURGICAL TREATMENT OF PRIMARY GLAUCOMA

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In the past few years many pertinent advances have been made in the treatment of diseases in the various branches of medicine. A number of these have been revolutionary while others are less spectacular. The treatment of primary glaucoma, unfortunately, must be relegated to this latter group. This is by no means indicative of the vast amount of study and endless research which has been carried on in association with this disease. Progress has been made, yet its care and etiology still, to all practical purposes, are in the experimental stages.

Much is known about this disease, and every year a huge amount of literature is published concerning new approaches to medical and surgical treatment. This paper will include a partial review of the more recent advances and trends in the treatment of primary glaucoma.

Our most important adjuvant to the successful treatment of glaucoma is early recognition. This may be extremely difficult as its early symptoms are often obscure and may simulate many conditions, especially the functional or psychosomatic ones. The efficacy of medical or surgical treatment is enhanced by early application of our knowledge during the disease's incipency; thus we must be on constant guard and attempt to anticipate the disease in patients who may be predisposed. Gradle¹ calls these "preglaucomatous" patients. A careful history is most important when vague complaints referable to vision are made by patients of middle age and over. The acute shallow angle type may give a history of pain following an emotional or physical disturbance, halo vision, decreased vision, or injection of the eyeball. Headaches may occur after ten to fifteen minutes in a dark room or picture show. The iris may show telltale effects from bouts of increased pressure. It is even more difficult to predetermine the deep angle form.

The slit lamp and gonioscope have come into more general use in the past few years as aids in diagnosis and study. The former is indispensable in determining whether the rise in pressure is primary or secondary. An occasional cell in the aqueous or a small posterior synechia may give a valuable clue. Minute changes may be shown in the iris pigment, caused by an early attack of pressure. The gonioscope, though not new, is being used in more offices as a routine in suspected cases whereas before it was only utilized

in some teaching institutions. It does not determine the course of treatment nor even the type of glaucoma, but it may give valuable insight to a case and aid in determining the course to be followed, more exacting prognosis and whether one type of therapy may succeed or not. Kronfeld² found that all cases of acute congestive glaucoma responding to miotics had at least a partially open angle. If synechia were present, that at least a sector of 70° to 90° must be "breakable" to reduce tension significantly and safely. Some glaucoma patients with a narrow angle and peripheral synechiae involving three-fourths or less of the angle could register a normal tension, but most of them required miotics. If the angle were completely closed, miotics reduced the tension but not enough for control. A frozen pupil following attacks of pressure showed no response to miotics unless the synechiae occupied less than three-fourths of the angle circumference. He found no correlation with the use of miotics and lowered tension in the wide angle type.

General Treatment

Though it is often mentioned, too little emphasis has been placed upon the importance of general care and correction of poor hygiene. The tendency is to treat the eye quite apart from the individual. All infection must be eliminated and the patient built up as much as possible to best combat his malady. A survey should be made of everyday habits and whether or not adequate rest is obtained or if abuse is made of stimulants such as coffee and alcohol. Oftentimes we are confronted with a very unstable or emotional person. These are difficult to combat and are usually discouraging.

Medical Treatment

This generally indicates drugs used locally in the form of drops. The most important of our meager armamentarium are the miotics. Of these, pilocarpine 1 to 6 per cent, and eserine $\frac{1}{4}$ to $\frac{1}{2}$ per cent still constitute the basic pattern for treatment. A discussion of their use alone or in combination would be too repetitious. However, emphasis should be placed upon the intelligent use of them. All patients should not be advised to use them just three times a day and then sent on their way. Timing is important, and this varies with the individual and his habits. A drop should be instilled before entering a picture show or a dark room, etc.

Neostigmine in 2 to 5 per cent solution, acting like eserine, has gained popularity in the past decade. It may be used alone or synergistically with 20 per cent mecholyl. The latter is a choline derivative, and the combination of these two drugs

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is sometimes very effective in reducing an acute attack of hypertension prior to operative intervention. A drop of each solution used every ten minutes for seven instillations will sometimes suffice, or if this fails, continued application every half hour. Clark³ also used retrobulbar injections of mecholyl, though this may be hazardous, requiring 1/100 gr. of atropine to offset the general vasodilatory effect.

Doryl or carbachol has some adherents.^{4, 5} It, too, is a synthetic choline derivative and a potent miotic. It is not advised in congestive glaucoma because of the untoward vascular reaction, but in simple glaucoma is more effective than pilocarpine 2 per cent and equivalent to eserine .25 per cent. Slow hydrolysis in the tissues allows a prolonged effect. Suggested strength is .75 to 1.5 per cent used one to three times daily. Combination with a wetting agent, such as zephherin 1:3500, has been found to enhance absorption through the cornea. Massage following the instillation of drops is suggested to further augment the drug's efficiency. It is used to best effect in chronic glaucoma and some have advocated it as a good rest drug for a period when pilocarpine and/or eserine seem to lose their effect.

Furmethide,^{6, 7} a choline derivative used in a 10 per cent strength, was introduced in 1941 for the treatment of glaucoma. It is parasympathomimetic in its action, but has no esterase linkage and therefore has no synergistic action when used with a choline esterase inhibitor such as eserine or neostigmine. In a 10 per cent solution it acts more promptly, longer and more intensely than combined 20 per cent mecholyl and 5 per cent neostigmine. It is effective in both the primary noncongestive and congestive types of glaucoma. It is less effective in early congestive glaucoma than mecholyl and neostigmine, but more so when used in the later stages. It is slightly more effective than pilocarpine in chronic simple glaucoma. For reduction of high tension, the following procedure is recommended: drops, one every fifteen minutes for two hours then every three hours until tension is reduced or surgery is performed.

Another drug has been reported in the past few months; this has been named "DFP" for diisopropyl fluorophosphate.^{8, 9} Its chemical action, like that of physostigmine, is one of inactivating cholinesterase. However, it produces more extreme miosis than eserine in a normal eye and lowers the intra-ocular tension for a much longer period. From the advanced information, it appears to be a valuable asset to the medical treatment of glaucoma.

In one report, 122 eyes of 82 patients were

treated whose pressure had not been controlled with use of pilocarpine and/or eserine. The technique consisted of tonometric readings and visual examinations, after which one drop of 0.1 per cent DFP in peanut oil was instilled. Tension was taken again in forty-five minutes. In nearly every case tension was lowered within this time. Patients were instructed to use the drops two or three times a day. Examinations were repeated in 48 and 72 hours. If tension were lowered, the drops were used once a day or on alternate days at bedtime. If no change were noted, instillations of drops were continued three times daily. Those with complaints referable to ciliary spasm were given the 0.05 per cent strength. After the first week most of the discomfort had abated and blurring was less noticeable. Fifty-seven and four-tenths per cent of these patients were controlled by this therapy; 63 per cent of these required only one to seven drops per week. The most satisfactory strength was .1 per cent. A .2 per cent solution was tried without additional success. An important observation was that Negroes and white people responded equally well.

There are drugs, such as adrenalin and other sympathetic stimulants which may assist in lowering intra-ocular tension by vasoconstriction. Their use should be limited to simple glaucoma, as where applied to congested eyes, vessels may dilate still further, producing increased congestion with its associated ill effects. Adrenalin may be used in strength up to 1:100, or epinephrine bitartrate in a 1 to 2 per cent solution.

Osmotherapy—Such drugs as hypertonic solutions of sodium chloride or glucose may be used intravenously for temporary relief of increased tension. Their use is well known.

Surgical Treatment

When the more conservative treatment fails, then surgical intervention is indicated. The acute and chronic congestive cases with their associated symptoms offer a much easier immediate problem than the noncongestive types. Immediate relief of the increased intra-ocular pressure is imperative if the integrity of the globe is maintained. Whether or not miotics reduce the tension to normal, surgery is still indicated. There seems to be less tendency to treat these cases as surgical emergencies but rather to allow the more powerful miotics to exert their effect. This period should not exceed 36 to 48 hours unless tension has been markedly reduced to near that of normal.

The chronic noncongestive types with the lower range of pressure are a more difficult problem. Fortunately more and more of these cases are being operated before fields have been markedly

reduced. Too often one sees these cases progress to blindness even though the tension is brought to within normal limits by surgical means. However, some meet this same end in spite of early surgical intervention, and too often one has these plaguing cases around to arouse considerable doubt as to the wisdom of his decision. Vision may have been maintained equally as long without exposing the patient to the hardship of surgery. On the other hand, if surgery is performed a high degree of success is attained only when operations are early, when damage is minimal, and conditions are optimal.

There have been no radically new surgical procedures introduced recently. Most of the operations are directed towards increasing the outflow of aqueous, though there are some which decrease its production.

Trephine: The most popular operations for the control of simple glaucoma involve some type of sclerectomy in the region of the limbus; of these, the corneoscleral trephine is the most widely practiced. There are several important factors which contribute to this operation's success. The flap should include Tenon's Capsule throughout the dissection to the limbus. The position of the trephine should include a portion of the cornea, as farther posteriorly the ciliary body may clog the filtering area. Wiener maintains that if a large portion of Decemets membrane is included in the trephine, the chances of occlusion by scar and endothelium are considerably mitigated.

The Iris Inclusion operation is growing in popularity in recent years. This is usually combined with a Lagrange sclerectomy, enlarged with a punch or scissors. Its success too is dependent upon maintaining a subconjunctival aqueous filtering bleb. A large conjunctival flap is dissected or carried down on the tip of a keratome.¹⁰ The sclera is incised 1 to 2 mm. from the limbus to expose the base of the iris. The anterior lip of the sclera is excised. The iris is drawn out of the wound and torn from its base. An iridectomy may be completed¹¹ and the pillars incarcerated in the lips of the wound, or the iris completely incised radially and the pillars laid back in the wound. The flap is closed by a running silk suture. Atropine is used postoperatively until iris irritation has subsided. Of importance is the use of massage by the first 48 hours. Some maintain that this should be continued for as long as six months, with or without miotics.

Roughly, the operation is indicated on any case where a corneoscleral trephine is contemplated. Some suggest its feasibility even in cases of the acute congestive types. Advocates of this opera-

tion claim the following advantages over the trephine:¹² (1) After an iris inclusion the anterior chamber forms more rapidly, usually by 48 hours. The advantages are obvious. (2) Lens damage is much less frequent. Following a trephine, the lens often shows progressive changes, adding to the already annoying difficulties. (3) The operative sight allows a greater freeing of the filtration angle. (4) The degree of success is much greater in the Negro.¹³ (5) There is less danger of late secondary infection through the thicker bleb. (6) An iris inclusion may be used for acute congestive cases. (7) The technic is much easier. The disadvantages are: (1) Sympathetic ophthalmia may occur with iris inclusion. (2) Trephine is more successful where iris atrophy is apparent, as adequate drainage seldom occurs when an inclusion is used.

*Cyclodiathermy*¹⁴ is a fairly new procedure. The basis for this concept of treatment is placed upon the reduction of aqueous formation by reducing the blood supply from the long posterior ciliary vessels. A conjunctival incision is made 8 mm. from the limbus, preferably on the lower one-half of the globe, to leave the upper portion free for any further surgery. A nonperforating electrode is applied firmly to the sclera 4 to 5 mm. from the limbus. The procedure covers one-half of the globe with the seared areas adjacent to each other. Perforating punctures may be used in a double row, 1 mm. apart at 3 and 5 mm. from the limbus. Atropine is instilled and the patient placed at bed rest for forty-eight hours. Complications are: (1) Bullous keratitis which yields readily to treatment; (2) iris hemorrhage if coagulation is too close to the limbus; (3) intraocular hemorrhage sometimes occurs with the perforating technic as well as infection and a slowly forming anterior chamber; (4) possible sympathetic ophthalmia. Though this operation¹⁵ was originally advocated for use in the more advanced and complicated types of glaucoma, one author recently has used the technic successfully in glaucoma simplex, especially in Negroes.

Cyclodialysis is an operation aiming at establishment of supra-choroidal drainage of aqueous. The scleral incision is placed about 8 mm. from the limbus in either of the two upper quadrants. It is used to best advantage in early low tension cases, though it is particularly applicable in aphakic glaucoma. Its advantage lies in its simplicity and the comparative lack of trauma. However, where permanent results are expected, this operation should not be performed.

Choice of Operation—The success of surgery is largely determined by the type of operation

chosen and the skill with which it is performed. No single operation is equally successful in all types of glaucoma nor in the hands of all operators.

For early acute congestive glaucoma,¹⁶ a wide basal iridectomy is best. In the later stages when anterior synechiae are established and miotics produce little or no effect upon the tension, an iridectomy alone often fails to give permanent control of pressure. In this stage an iris inclusion is favored^{17, 18} when combined with an iridectomy. This concept also holds true for chronic congestive glaucoma.

In simple glaucoma, any of the sclerectomies forming a filtering bleb are acceptable. The trephine has some preference over iridencleisis in patients under 60 years of age and all those with iris atrophy. The wide angle types seem best controlled by iris inclusion.

Summary

A review is made of the medical and surgical treatment of primary glaucoma with discussion of the newer drugs and the trend in the last decade toward some types of operations.

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Discussion

Placidus J. Leinfelder, M. D., Iowa City: Doctor Wolfe has performed a distinct service in presenting this review of the treatment of glaucoma. Unfortunately, he is unable to present any spectacular contributions to our knowledge, for none has been made

in the last decade. Progress in our understanding of glaucoma is extremely slow, and as one reviews the subject he is struck by the little that has been added since the time of Elliott. Some "advances" have been heralded with enthusiasm, but time has often shown that they constitute only another method of diagnosis or another treatment. Nevertheless, the more widespread utilization of the gonioscope is improving our thinking about the disease, and the addition of several new drugs that enhance our armamentarium has allowed greater variation in treatment before resorting to surgery. Patients who do not respond to one drug may respond to another, and in many cases operative treatment may be avoided or delayed. Although DFP has not been tried over a long period of time, preliminary reports are encouraging and we may find in this drug a most satisfactory means of medical control.

The early diagnosis of glaucoma remains a difficult problem, and constant suspicion of its presence is mandatory to avoid errors. Visual field studies and intra-ocular pressure readings are necessary procedures in both diagnosis and treatment. Always of primary importance is the effect of increased pressure upon the optic nerve and retina; it is only by means of perimetry and campimetry that this can be adequately measured. This requires repeated plotting of the peripheral field and blind spot with small targets. Because the procedure is time consuming and somewhat monotonous, this most important phase of glaucoma study is often inadequately performed or neglected entirely.

Gonioscopy adds information by allowing the examiner to evaluate the nature of the changes in the chamber angle. The procedure is particularly useful pre-operatively to aid in the selection of the type of operation to be performed, and postoperatively to determine the effectiveness of the surgical intervention.

In prescribing drops we are obligated to instruct the patient in their proper use. Most effective absorption results from instillation of the drop at the upper limbus when the eye is rotated downward. Further effect is obtained if the patient keeps the eyes closed for two minutes following the application. Improper instillation of any of the miotics may result in failure of absorption. If the pupil is not contracted by a miotic the drug is not being absorbed.

Massage following surgery is theoretically sound, and at times it may be necessary in order to maintain normal intra-ocular pressure. When the anterior chamber is empty or very shallow, care must be exercised, for injury to the lens may occur. In some instances this may be responsible for the cataractous changes that have been observed following certain glaucoma operations.

Cyclodiathermy is gaining advocates, and several investigators are studying its effect on the eyes of experimental animals. It is hoped that more effective means of controlling intra-ocular pressure may be developed through these studies, and that less extensive diathermy destruction of the ciliary body may prove successful in early glaucoma.

Goniotomy is being used by more and more surgeons to relieve the increased intra-ocular pressure in congenital glaucoma. The results that have been reported are much better than those obtained by other operative measures. The technic is simple and the procedure can be repeated if the first or second attempt is unsuccessful.

FETAL AND NEONATAL DEATHS*

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Although there has been a definite reduction in mortality throughout the United States for infants under 1 year of age during the last twenty years, there has been but little reduction in the mortality for infants under 1 month of age. In Omaha, Neb., a city of 225,000, during 1944 there were 197 deaths in infants under 1 year of age, 128 of which occurred during the first month. This does not include 120 stillbirths during the same period.¹ A further reduction in neonatal mortality will depend on a determination of the responsible factors.

The present report is based largely on necropsies performed by members of the Department of Pathology, The Creighton University School of Medicine, on 306 fetuses and infants dying in private hospitals from Jan. 1, 1934, to July 1, 1945. The study was made to determine the causes of death and contributing environmental conditions and to compare these findings with those reported from lying-in hospitals in some larger cities. By such a report it is also hoped to call attention to the fact that even a complete autopsy and thorough search into the environmental conditions of the fetus in utero still leaves a rather large number of babies in which the exact cause of death cannot be definitely stated. It is not the purpose of the present paper to enumerate methods of preventing many of these deaths, but rather to point out their causes and contributing factors, hoping that such knowledge will enable the obstetrician and pediatrician to take necessary steps to prevent such deaths once the cause or contributing factor is recognized.

The period of gestation was determined by fulfilling two of the three following conditions:

	Weight	Length	Gestation
Term	2500-4499 gm.	47.1-54 cm.	38-42 wks.
Premature	1000-2499 gm.	35-47 cm.	29-37 wks.
Previsible	400- 999 gm.	28-35 cm.	22-28 wks.

The fact that congenital malformations account for 17 per cent of the deaths in our series and is second in importance to that group with no pathologic lesions can be accounted for in part by the relative ease with which necropsy permission can

be obtained in such cases. It is slightly higher than the 15.6 per cent reported by Bundesen.²

If an infant dies after 1 month it is generally safe to assume that the death is not the result of antenatal or intranatal complications. Therefore, in studying the effect of antenatal and neonatal mortality Bundesen et al.² used the group of full term infants who died between the ages of 1 and 11 months inclusive as a basis for comparison with all infants who died during the first two weeks of life. They found that complications of pregnancy and labor occurred in 45.8 per cent of mothers of infants who died under the age of 2 weeks but in only 17.4 per cent of mothers whose infants died between 1 and 11 months. This difference is significant; it indicates that complications of pregnancy, labor or of both are important factors in the death of infants under 2 weeks.

Tabulation of the causes of death (see table 1) indicates that from the anatomic findings at autopsy the cause of death could be determined in only 45.4 per cent of the cases. However, if one considers the environmental conditions of that fetus or infant while in utero (see tables 2 and 3) a cause of death or a contributing cause will be found in over half of the remaining cases. In the 108 prematures (see table 2) approximately 50 per cent were associated with environmental conditions unfavorable to the infant. In stillborn infants (see table 3) an unfavorable environmental condition could be found in 66 per cent of the cases. By subtracting the number of environmental factors from the total of those babies with no pathologic lesions there remain about 75 babies (24.8 per cent) with no explanation for the cause of death. This is close to Potter's³ 21.6 per cent figure for unexplained fetal and neonatal deaths at the Chicago Lying-in Hospital.

A possible cause of some remaining deaths, especially in stillborns, could be accounted for by a fetal bacteremia, as reported by Douglas and Stander.⁴ They found that a rather large percentage of deaths in infants born dead after prolonged labor was due to a fetal bacteremia; usually the micro-organism was an anaerobic streptococcus, which in 85 per cent of their cases caused no recognizable pathologic lesions in the baby. The investigation of our stillbirths has not included culture work in enough cases to be of statistical value.

Since asphyxia is such an important cause of death and is probably contributory in many other cases, especially in that group with no pathologic lesions except considerable immaturity, further consideration should be given to conditions likely

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TABLE 1
Leading Causes of 306 Fetal and Neonatal Deaths

	No. Cases	Per Cent
Congenital malformations	52	17.0
Cerebral hemorrhage	39	12.7
Asphyxia	17	5.6
Pneumonia (all types)	8	2.6
Erythroblastosis	6	2.0
Congenital syphilis	3	0.9
Miscellaneous	14	4.6
No demonstrable pathologic conditions	167	54.6
(a) Viable infants with marked atelectasis	21	7.0
(b) Infants showing marked immaturity or born of mothers with pathologic conditions or both	88	28.7
(c) Full term infants with no atelectasis or maternal factors	5	1.6
(d) Stillborn infants with no lesions	53	17.3
Total	306	100.0

TABLE 2
Predisposing Cause of Premature Labor in 108 Cases

No demonstrable cause (including premature rupture of membranes)	54
Congenital Anomalies	1
Heart	5
Multiple	1
Obstetrical	13
Multiple births	13
Vaginal bleeding (last 3 months)	9
Placenta previa	4
Toxemia	10
Caesarian section	4
Trauma (history of)	2
History of previous premature	9
History of previous stillbirth	1
Induced abortion	3
Infection in mother	2
Syphilis	1

TABLE 3
Causes of Stillbirth in 105 Cases

No demonstrable cause	35
Obstetrical	8
Toxemia	2
Placenta previa	6
Premature separation of placenta	4
Vaginal bleeding last 3 months	4
History of trauma	4
Multiple births	1
Difficult labor	4
Congenital anomalies	5
Anencephalus	4
Hydrocephalus	4
History of previous	4
Premature	14
Stillbirth	7
Cerebral hemorrhage or edema	3
Erythroblastosis	3
Cord around neck	2
Prolapse of cord	2
Knot in cord	1
Diabetic (mother)	3
Syphilitic (mother)	5
Intrapartum infection	1

TABLE 4
Congenital Malformations in 53 Cases

Brain and spinal cord	18
Skeleton	7
Heart	20
Gastro-intestinal	7
Liver and bile ducts	2
Genito-urinary	7
Hernias	7
Multiple malformations	11
Other	1

to bring about this type of death. Parsons⁵ subdivision of anoxemia is helpful in such consideration:

(a) Anoxic anoxemia, anything that disturbs the efficiency of the mother's respiration or circulation.

(b) Anemic anoxemia, such as anemia in the mother or erythroblastosis in the infant.

(c) Stagnant anoxemia, as would be the case with knots in the umbilical cord, premature separation of the placenta, or cardiac failure in the mother.

(d) Histotoxic anoxemia, which would be caused by drugs, anesthetics or any disease which would lower the functional activity of the cells of the respiratory center.

In estimating causes of deaths, Potter⁶ emphasizes the importance of the time of death in relation to the labor. In those infants dying before the onset of labor, about 50 per cent were macerated and about 50 per cent had known environmental factors unfavorable to the infant. In those deaths occurring during labor, anoxia was the leading cause while most deaths after birth were due to cranial hemorrhage. The death rate for viable prematures dying after birth was about 27 times that of full term infants dying after birth. This emphasizes the importance of carrying a pregnancy as near to term as possible.

We have not considered atelectasis as a cause of death. With marked immaturity the lungs may not be capable of proper expansion due to inadequate development or the respiratory center may not be capable of initiating respiration, but in either case the condition of the lungs is a result of the immaturity and should be so classed.

Factors⁷ which are of special importance in contributing to the deaths of infants from intracranial hemorrhage are operative procedures, primiparity and injudicious use of posterior pituitary. Thus, in the case of intracranial hemorrhage, effort must be directed toward providing the most skilled type of obstetric care during labor and delivery.

Contributing factors which are of importance in deaths from asphyxia are breech presentation, the use of analgesics and operative procedures because of fetal or maternal disproportion.

Factors which are of special importance in contributing to the deaths of infants under 1 month from pneumonia are complications of labor and pregnancy, and prematurity. Of particular importance in this regard are the special nursing technics which provide for adequate warmth, humidity and the prevention of air-borne infections by semi-isolation methods.

In our experience, syphilis has been an infrequent cause of fetal and neonatal death. In only 1 case of prematurity and in 5 stillbirths could a history of syphilis or a positive serology be obtained.

Occasionally trauma precedes the onset of premature labor or the birth of a stillborn but it is

exceedingly difficult to establish a causal relationship. In the two cases resulting in birth of a premature infant and in the four stillbirths no traumatic injury to the fetus could be determined, and there was no indication of premature separation of the placenta in any case.

Summary

1. The leading causes of fetal and neonatal death as encountered in 306 autopsies are presented.

2. About one-half of these deaths cannot be accounted for by anatomic findings at post-mortem.

3. In those cases with no pathologic lesions the antenatal and intrapartum conditions which have an unfavorable influence on the infant are discussed.

4. Maternal conditions which are of special importance in contributing to deaths due to cerebral hemorrhage, asphyxia and pneumonia are briefly enumerated.

5. Syphilis and trauma are uncommon causes of premature labor and stillbirth.

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NUTRITION IN PREGNANCY

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Through improved nutrition of pregnant women it is estimated 1,000,000 babies would be born in the United States each year with a better chance for health and well-being. Similarly, many mothers would be spared complications and difficulties from pregnancy and childbirth. Although much remains to be learned about the actual amounts of the various nutrients needed, we do have a working knowledge. No one is in a better position to translate this knowledge into human values than the physician.

Evidence of the importance of nutrition in reproductive efficiency has come from laboratories, clinics, and mass population studies. With white rats, Sherman has shown that simple improve-

ments of an already fair diet result in improvement of productive performance as well as in growth, maturation, and the span of life.

With 216 women Burke and co-workers at Harvard University^{1, 2, 3} observed a statistically significant relationship between the quality of diet of the mother during pregnancy and the "quality" of the infant at birth.

Quality of Infant	Prenatal Diet			Wt.		Length cm.
	Good %	Fair %	Poor %			
Superior	56	35	9	8 lb.	2 oz.	50.8
Poor	3	18	79	5 lb.	15 oz.	47.2

Among the entire group, every stillborn infant, every infant who died within a few days of birth except one, the majority of infants with marked congenital defects, all premature, and all "functionally immature" infants were born to mothers whose diets were very inadequate. No woman whose diet was rated as good or excellent had toxemia; in contrast this condition occurred with 44 per cent of those whose diets were poor to very poor and with 8 per cent of those whose diets were fair. When the diets were good, there were no complications during the prenatal period in 68 per cent of the cases. In the complications experienced by the remaining 32 per cent, preeclampsia and eclampsia were conspicuous by their absence. When the diets were poor, 42 per cent had uneventful pregnancies while 58 per cent suffered from antenatal complications, largely preeclamptic in nature.

The more difficult types of delivery appeared more frequent among the women with "poor" to "very poor" diets despite the fact that the infants at birth averaged about three pounds less than the infants whose mothers' diets were good or excellent. This, of course, might be related to the poor nutrition of the mother during her own childhood as well as during pregnancy, but the evidence of the benefits of a good diet during pregnancy is overwhelming.

Ebbs and co-workers⁴ studied the diets of approximately 400 women attending a prenatal clinic in Toronto. By supplementing the diets of approximately one-half of the women who were receiving otherwise poor diets and by educating another group of women so that they ate moderately good diets, three groups were formed for observation throughout pregnancy and convalescence. The number of complications affecting the mothers and infants was much greater in the poor diet group in which there were also more miscarriages, stillbirths, premature births, and infant deaths. The incidence of illness was greater among babies born of mothers on poor prenatal diets, and the general condition of the babies at six months of age was found to be inferior in this group.

There is increasing evidence that at least some toxemias of pregnancy may be of complex nutritional origin. Dietary induced toxemias have been observed in the rat, guinea pig, and rabbit. It is also of interest that in the United States, the occurrence of human pregnancy toxemia strangely parallels that of pellagra.⁵

Since 1934 research workers under the auspices of the National Birthday Trust Fund have tested the effects of adding certain foods to the usual diets of large numbers of pregnant women in England and Wales. A general conclusion from these observations is that supplementation of the customary diets with natural foods reduces the incidence of neonatal infant morbidity and mortality.⁶

The results of the wartime nutrition program in Britain offer evidence on a broad scale. Dietary surveys of the general population in the years before the war showed that the food intake of the poorer sections was inferior and that the diets of pregnant women were even less satisfactory. In spite of the inevitable deterioration in housing and in "general amenities" during the war years, the loss of infant life decreased. Since 1941 babies in England have been heavier and longer in their first years of life than they were in the years 1933-36. Nutrition, according to Garry and Wood, is the only factor which improved during this period. This rose especially in the poorer sections which supply most of the babies. The increase in consumption of milk and vegetables affected the poor chiefly. The average consumption of milk actually fell with the richer groups, while that of the poor people rose about two-thirds. The scientific knowledge of nutrition enabled Great Britain successfully to combat the blockade during 1939-40. In so doing the general standard of nutrition, especially of pregnant and nursing mothers, was raised above the level of prewar years.

The provisions made in Britain for pregnant and lactating women included: (1) an additional pint of milk; (2) a 50 per cent increase in meat ration; (3) a double allocation of shell eggs and dried eggs; (4) an allocation of citrus fruit when available.

Pregnancy places a strain on the organism which results in the need of additional nutrients

despite the numerous biochemical and physiologic adjustments which may be made by the maternal organism. Successful reproduction is rightly called the acid test of a diet. Nutritional preparedness for the expectant mother begins before the period of pregnancy, but much can be accomplished by good dietary management at that time.

Unfortunately it seems that the nutriture of this important group of people may be poorer than that of nonpregnant women. Darby⁷ has noted in his studies in the Tennessee-North Carolina region that there is little tendency for pregnant and lactating women to increase their intakes in anything but calories. Of 514 pregnant women studied in Philadelphia, Williams⁸ found that only 2 per cent had diets which met the optimum recommendations of the National Research Council. Forty-one per cent had diets between the optimum and the minimum, and 57 per cent had diets below the minimum. As previously stated, mass studies in Britain revealed the diets of the pregnant women inferior to those of others in the same locality and circumstances.

Most of the factors which operate against good nutrition are overabundant in the groups in which the birth rate is greatest. Education, economics, availability of foods, and habits of eating present important problems to be met if conditions are to be improved.

Ebbs found that much could be accomplished through education of one group of mothers to better food selection. He stated that practical instruction in nutrition should be a part of all prenatal clinics and of the general management of expectant mothers, particularly those in the low income group.

The increases in nutrients needed during pregnancy are not evident until the latter half. If the woman has been eating a good diet, practically no dietary changes need be instituted at first, except possibly the addition of vitamin D in some form and increasing the milk intake to one quart daily. If such has not been the case, the first step should be converting her food habits to a more satisfactory type. If there is reason to believe that the stores of nutrients are poor, the diet may need special provision for the reinforcement of these stores.

While there are many ways by which a good

CHART I

	Calories	Protein	Calcium	Iron	Vit. A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Vit. D
		g	g	mg.	I.U.	mg.	mg.	mg.	mg.	I.U.
Mod. active woman	2500	60	0.8	12	5000	1.2	1.6	12	70	
For sedentary woman—										
Pregnant (latter half)	2500	85	1.5	15	6000	1.8	2.5	18	100	400 to 800
Increases		25	0.7	3	1000	0.6	0.9	6	30	400 to 800

CHART II

Food	Amount	Calories	Protein	Calcium	Iron	Vit. A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	1 pt.	317	g 16.8	g .566	mg. 0.33	I.U. 768	mg. .192	mg. .316	mg. .48	mg. 4.8
Egg	1	79	6.4	.027	1.35	570	.060	.170	.05	—
Orange juice	100 g.	50	0.9	.033	0.40	190	.080	.030	.20	49.0
Green & yellow vegetables	100 g.	62	3.4	.042	1.26	4436	.170	.113	1.06	17.0
		508	27.5	.668	3.34	5964	.502	1.129	1.79	70.8

diet may be obtained for the normal adult, a daily plan may be easily built on the following:

1 pint of milk
1 serving meat
1 egg several times a week
whole grain or enriched cereals
butter or enriched fat
1 serving green and yellow vegetables
1 potato
1 serving of citrus fruit or tomato juice
other vegetables and fruits as desired,
perhaps as many as 3 servings.

The nutrients obtained from such a diet will provide most of the daily needs.

With this as a base, one may then begin to plan the changes for the pregnant woman. The actual increases in nutrients as indicated in the recommended allowances of the National Research Council are as shown in chart I.

If the woman has been sedentary there may be an increase of 300 or 400 calories over the previous allowance. Mainly the problem is one of choosing foods which will provide a large amount of nutrients and few calories. Since these foods will, of necessity, carry some calories, they must, to some extent at least, displace calorific foods of less nutritive value, such as sweets, refined fats and cereals.

As shown in chart II, the increased needs may be largely met by 1 pint of milk, 1 egg, 1 serving of orange juice, and 1 serving of green and yellow vegetables (as carrots, peas, and snap beans).

The addition of one serving of liver a week and perhaps another serving of meat may compensate the niacin lack in the supplementary group of foods. The thiamine margin may be improved by the use of whole and enriched cereals, lean pork as the source of meat, probably as many as two times a week, and the occasional use of legumes.

Considering this group of foods in addition to the recommended lists for a good diet normally, the following may be suggested as a guide for the choice of foods in the latter part of pregnancy:

Milk—one quart a day—this may be in addition to small amounts used in food preparation.

Egg—one a day, plus the use of egg in prepared foods.

Meat, fish, or poultry—at least one serving a day. One serving of liver once a week.

Green and yellow vegetables—two servings a day.

Citrus fruits, tomatoes, raw cabbage, or melons—two servings a day.

Other vegetables and fruits as desired.

Cereals—whole grain or enriched, moderate amounts.

Butter or enriched fat—small amounts.

Sweets—limited largely to that which is necessary to make other foods palatable.

Some source of vitamin D daily.

Ebbs and co-workers estimated that the supplementary food used in their study cost no more than \$25 per person for the entire period of supplementation. The supplements here suggested at present prices amount to approximately twenty cents a day, or about \$30 if given throughout the last five months of pregnancy. Probably no better investment could be made in public health than the provision of this food for those expectant mothers who cannot afford to buy it. At least it would seem desirable that the barriers which operate against securing the more nutritious foods should be removed. It is regrettable that such an important food as milk must carry a tax which adds appreciably to its cost. Minimizing the cost of milk would seem to be in the interest of public health, present and future.

A larger investment is needed for education for better food selection in pregnancy as well as in other conditions. In the meantime the encouragement of the doctor will do much to stimulate the expectant mother to apply the knowledge available in nutrition, which offers much for the welfare of her and her baby.

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SPECIAL ARTICLE

THE INDISPENSABLE MAN

William M. Sproul, M.D., Des Moines

For his President's Address before the annual meeting of the American Medical Association on June 12, 1934, Dr. Walter Bierring chose as his subject "The Family Doctor and the Changing Order," quoting the three hundred year old writings of René Descartes by saying, "If ever the human race is lifted to its highest practicable level intellectually, morally, and physically, the medical profession will perform that service." In bringing to your attention the present status of the general practitioner of medicine, and discussing briefly for you what he is facing in the future, it is not with the slightest idea of arraying him for battle against any extant ideologies of medical practice or against any or all specialists. We fully appreciate that the drift between specialists and general practitioners is in a constant state of flux, and it is not always away from the general practitioner. This is a correct statement; however, the situation may be evaluated from a philosophical standpoint in its relation to the people we serve.

The art and practice of medicine comes down to us from the ages steeped in tradition and teeming in mythology, but it has been overwhelmed by the "mushrooming" of the science of medicine in only the last fifty or sixty years. That period marks the heyday of the old family doctor which Sir Luke Fildes portrayed in his famous painting. It was at that time that old Willum McClure was so beautifully described in "Beside the Bonnie Brier Bush." Since then our country has advanced beyond all expectations in all fields of human endeavor till now we appraise the family doctor, not upon a sentimental basis but upon the grounds of his artful application of scientific medicine. Because of his rich experience in intimate human relationships, it is admitted he approaches his patients from a somewhat different point of view than does the busy specialist. Since there are so many of us in general practice we feel we have a deep interest in the welfare of the whole system of medical practice. It is an admitted fact that if a building is erected upon an unfirm foundation or if it is built of top-heavy proportions, it but awaits some of the ravages of the elements to dash it to destruction. Our minds are not so short that we fail to remember that in the great depression of 1933 many doctors in

large cities closed their offices, turning to the more lucrative fields of operating taxicabs, elevators, etc. The facts reveal that none of these unfortunates were general practitioners.

This brings forth such questions as the following: Why are so many doctors deserting general practice? What is the trouble with the family doctor? Is there a need or a demand for the family doctor? What is his future? Should or can the specializing trend be checked?

Of the 160,000 practicing physicians in this country, slightly more than 20,000 have been certified. There is about the same number who specialize more or less but are not certified. Of those certified, many are quite young, many are teachers and many are engaged in full or part-time research. Obviously, one may conclude that during the last 50 years well over 90 per cent of medical care has been given to patients by general practitioners. Nevertheless, we find we are again undergoing the same cycle that followed World War I, only this time the amplitude of the undulation has increased. There are two obvious reasons—financial advancement and increased prestige in the profession. Even though our teaching institutions profess to train men for general practice, it is hard for students and house doctors to escape the subtle influence of knowing that certification is required of the teacher. They may pay lip service to the family doctor, but it is a case of "What you are speaks so loudly that I cannot hear what you say." If the student's mind has not been quickened to the idea of specialization prior to arrival in medical college, this situation will quicken it. Then, as he looks about him and discusses his future with others, the financial factor becomes a major consideration.

In all studies which have been conducted it has been found that the specialist receives but little less than double what the practitioner receives for a year's work. Obviously, many factors enter into this situation such as the large fees received in some specialties for the services rendered (which raise the average). Also, during the present spending spree in this country many patients by-pass the practitioner, thinking their own diagnostic acumen is such as to enable them to select the proper specialist themselves. Perhaps the growth of groups or clinics should be mentioned here, as many people present themselves to such organizations feeling that they will be guided into the proper hands by elimination. Although this might have its benefits, it raises the specialist's income.

If the pot of gold at the end of the rainbow is desirable, the rainbow itself is lovely to look at. So it appears with the prestige of the specialist.

The war has done much to foster this idea. Inasmuch as medical officers were assigned in accordance with their training and experience within a particular specialty, the result was that indifferent, politics-ridden hospitals were converted into miniature teaching centers with the young medical officers setting their goal at certification to obtain a coveted higher rating. In this setting the family doctor either accepted very low ratings or chose administrative, sanitary or field duties where promotion did not depend on specialty training. Is it any wonder that many physicians will emerge from military service feeling that there is a high premium on specialty training?

The unit surgeon, the army's nearest approach to the family doctor, was rarely allowed to treat a man in quarters, usually had minimum equipment in his dispensary, and in most instances relinquished contact with the sick man as soon as he was hospitalized. Thus 11,000,000 soldiers were sent to hospital specialty out-patient services, and if complaints were in two different body systems, two doctors were seen. Therefore, is it unreasonable to expect that G. I. Joe may emerge with the impression that only specialists are capable of treating him? That is not all! The Veterans Administration gives a 25 per cent increase in base pay and appointment at a higher grade to a certified man. The Veterans Administration will have 19,000,000 men under its care, and their families will be inclined to think as the veteran thinks. Thus, if the veteran maintains the average of 3 dependents, that means a potential of 76,000,000 members of the American population will be indoctrinated with the concept that only specialists are equipped and capable of treating patients.

If 90 per cent of the medical practice of the last fifty years has been done by general practitioners, does this approaching situation mean that the family doctor has failed? Does it mean that he is actually no longer capable of being responsible for the welfare of around 90 per cent of the illnesses seen by doctors? Only two basic criticisms have been leveled at general practice. One is the failure of the practitioner, on occasion, to differentiate between the trivial and the serious. Examples of this fault are common. The other is the failure of the general practitioner to observe the limitations of his training. This is very serious. It may at times be occasioned by fear of loss of income or prestige. Both of these basic faults are susceptible to correction. Too, the criticism is directed at certain individual practitioners and not at the whole system of general practice.

No time need be taken here to recapitulate the accomplishments of the family doctor. Even to-

day the basic policy of the private practice of medicine rests on the general practitioner who takes care of the routine ills of all members of the family and refers them to appropriate specialists when the occasion demands. Is it an outmoded policy? Has it failed? Is it necessary for the pediatrician to prescribe for the children and the internist for the parents when the same upper respiratory infection strikes several members of a family? Must the orthopedist be called for the simple contusion, the sprained ankle or the undisplaced fracture? Does adequate care require the presence of a certified obstetrician at a normal delivery and the subsequent extra fee for routine care? In the last fifty years life expectancy has been increased from 33 to 60 years. Maternal and infant mortality has been lowered tremendously; many infectious diseases have been all but eliminated. Thus, has the general practitioner been successful in bringing these advances of medical science to his patient. Surely this implies he IS capable of treating patients.

Several authorities claim that from 80 to 85 per cent of all illnesses can be handled skilfully and efficiently by the general practitioner at minimum expense to the patient. There is marked economic waste involved in specialty care for routine conditions. The Committee on Cost of Medical Care estimated that, if the best interests of all concerned are to be served, not over 18 per cent of the medical population of the country need be specialists. The proportion of men now seeking specialization is above that and will bring the certified specialists close to 25 per cent of all doctors. Always remember that there are a number of men who specialize but never become certified.

On Feb. 9, 1946, the *New York Times* carried an editorial on the "Family Doctor" stating that he should truly be the patient's first line of defense, as "the family doctor practices the broadest specialty in medicine." The article went on to say that people want a friendly adviser to turn to in time of sickness, and that, if nothing is done to replace the dwindling supply of family doctors, the public will inevitably turn to the cultists who are quite willing to assume the responsibility for family health.

Just very recently President Truman has asked Congress to pass a National Health Act. This term is a misnomer to detract public attention from what in reality should be called "tax paid medical practice." Here again stands the family doctor as the bulwark of defense. The greatest opponents to such schemes have not been the doctors, nor even can first place in opposing them be given to organized medicine. The great restrain-

ing force has been the desire of the average man or woman to choose his or her own doctor.

That desire of a choice of doctor is born of an individual respect for and confidence in some particular member of our profession.

As the family doctor is diminishing in numbers, what shall we do about it? Obviously, we must increase the number of general practitioners, and much is being done toward this end. In the first place, general practice must be given a more central place in medical education. Organized medicine is awakening to the importance of the family doctor in the economy of illness. Thus, in 1946 the American Medical Association's Convention included, for the first time, a section on general practice. The Southern Medical Association has had such a section at its annual meetings for the last three years. Under the guidance of the American Medical Association, the University of Colorado is inaugurating special training for the prospective general practitioner. The newest medical school to come into being, the Bowman Gray School of Medicine at Wake Forest College, includes a course in family practice for third and fourth year students. The idea of these special courses is to emphasize the treatment of the "whole man." *The Journal of the American Medical Association* of March 8, 1947, states that the Illinois State Medical Society has asked the state legislature to appropriate \$50,000 a year for ten years to provide scholarships for prospective medical students who can pass the Admitting Board of the University of Illinois College of Medicine. These students must agree to practice in Illinois communities of fewer than 10,000 population, at least until their scholarships are repaid. Along with these college courses, special internships and resident training should be provided for young M.D.'s going into general practice. For example, in the March 15, 1947 issue of the same publication is the announcement that beginning on July 1, Cook County Hospital will require two years of rotating internship before permitting young doctors to specialize. There is a feeling by some that a period of three years in general practice should be required before eligibility for residency or certification is attained. In this way, a certain number of men would like it and thus remain in general practice.

The position of the family doctor on the hospital staff should be clarified. Many hospitals limit staff membership to certified specialists. This results from the failure of the practitioner to observe his limitations. Obviously, every man with a license to practice medicine should not perform all sorts of operations or carry out highly technical procedures. This jeopardizes the lives of

patients and sets a bad example for house doctors and students. On the other hand, many competent general practitioners have been barred from our hospitals, and students and young doctors have been deprived of the opportunity to learn something of the art of being a family doctor.

Regimented medicine, such as is found in the army, Veterans Administration hospitals, etc., should give more recognition to the general man. Here is where the trend away from general practice is strongest. This can be easily done by giving staff appointments to practitioners in teaching centers and army and veterans hospitals. The care of veterans in their local communities with the family doctor participating would be an important step. Some steps have been taken along this line, but at present the status of the plan is in doubt.

Secondly, we must raise the prestige of the family doctor by eliminating the causes for criticism of him. Standardization and improvement of his training is one large factor in this. Likewise, the work of the general practitioner should be limited to that for which he is adequately trained. More men should aspire to be family doctors rather than general practitioners in the literal sense. There is a real distinction between the two. Too many general practitioners fear they will lose face with their families if they do not undertake to treat all the ailments for which they are consulted. These men are apt to get into trouble by failure to observe their own limitations.

On the other hand, a family doctor must know the fundamentals of all medical specialties. Even so, he may limit his work as much as he chooses. The public fears that the general practitioner will fossilize. They may eye his "frönt," that is, his office, his furniture and his pretty receptionist, but they won't be fooled by it. The doctor must keep abreast of advancing medical knowledge, which is a stiff program. The public also wants "scientific, yet warmly personal attention." What is the value of personal attention? The patient in bed 14, diagnosis—duodenal ulcer, to the family doctor is John Doe, who has among other things indigestion. The roentgenologist and the clinical pathologist are most welcome in establishing diagnosis, the internist in outlining management. But the adherence to the regime and the ultimate outcome are far more dependent upon the family doctor who cajoles, threatens or placates as occasion demands. The returned G. I. admits he had the necessary care, but somehow he was not satisfied and frequently says, "They didn't pay any attention to me!" He knows this is not literally so, but the personal touch was missing. Personalized attention is not pampering but is a real

part of treatment on which, occasionally, rests the difference between recovery and invalidism.

Thirdly, it has been suggested that general practice be put on a specialty basis. Such a resolution was introduced to the House of Delegates of the American Medical Association. It was supposed that it would stimulate men to keep abreast, and raise the station of the family doctor in the eyes of the public. Thus, many of our doctors might be attracted into general practice. Those who opposed the resolution feared it would drive some men out of practice. At any rate, it was rejected on the basis that the State or National Board examination automatically certifies a man for general practice.

Fourthly, an improvement in working conditions for the general practitioner is at hand. During the war the public has learned, of necessity, to show greater consideration for the doctor. Improved highways make it possible for the general practitioner in rural areas to see more patients in much shorter time with less wear and tear on his nerves and automobile. Improved tools of the trade have contributed toward making general practice more satisfactory to the doctor. Many important laboratory tests can be well carried out in the doctor's office. The erection of small hospitals and health centers in smaller towns now make available the facilities for diagnosis and treatment upon which the recent graduate has been trained to rely. Then, when two or more family doctors can join forces, the working conditions can be materially improved.

Lastly, a strong organization of general practitioners could and should bear the responsibility for seeing that these proposals, one and all, are instituted.

In conclusion, what specialist can overcome the natural bias toward those things with which he deals? If a patient has a low back ache, the orthopedist would check the posture, the urologist the prostate, the gynecologist the position of the uterus and the gastro-enterologist the bowel habits. He must consult many specialists before the source of his complaint is found. Many fruitless diagnostic procedures could be avoided and money, time, and suffering saved by seeing the general practitioner first and, if necessary, being referred to the right specialist.

There is reason to believe that, in many instances, a patient may receive better care by routinely consulting his family doctor before seeking the attention of a specialist. No past or personal history, however skillfully taken, can begin to approach, in comprehensiveness, the knowledge possessed by the doctor who delivered the patient, treated his whooping cough and measles, gave him

his inoculations, stood by when the otolaryngologist removed his tonsils and the orthopedist reduced his football fracture, advised him prior to marriage, nursed him through his period of mental depression and watched the rising of his blood pressure. By having cared for his parents, siblings, wife and children, the family doctor may know more of his family problems than he knows himself. With such a background of information, it is possible that the family doctor's opinion on some obscure complaints may be more valuable by far than that of the highly trained specialist. The importance of seeing the patient as an integrated personality in his natural environment has been strongly emphasized by writers on psychosomatic medicine. Can any specialist even come near the family physician in his approach to do this? Is he not, truly, the indispensable man in our profession?

**College of Medicine
State University of Iowa
CLINICOPATHOLOGIC
CONFERENCE
April 7, 1947**

Summary of Clinical Record

A white male child, almost 8 years old, apparently had been well until his present illness. The history suggested that the home had been adequate. He had had uncomplicated measles and chickenpox when younger. He had been immunized against smallpox and diphtheria. At the age of 1 year a diagnosis of mild rickets was made, and there were no evident sequelae.

About Jan. 1, 1947, he developed a cough with fever and malaise which seemed to respond promptly to sulfadiazine therapy. Headache developed, however, which the home physician attributed to drug therapy. In mid-January the fever recurred with headache, malaise and anorexia. The parents noted puffiness of the face and coldness of the feet. A diagnosis of "flu" was made and sulfonamide therapy resumed. Vomiting occurred and the drug was discontinued. Subsequent urinalysis revealed large amounts of albumin and blood. These findings persisted and became more pronounced. The boy was admitted to a local hospital on Jan. 27, 1947, where he received penicillin every three hours without evident benefit. He was therefore referred to the Pediatric Department and was admitted Feb. 1, 1947.

Dr. S. C. Cullen (Anesthesiology): Why was there vasospasm?

Dr. Boyd: It was assumed to be present because of the elevated blood pressure. It accounts for interference with fluid exchange and thus possibly accounts for cerebral edema.

Dr. P. J. Leinfelder (Ophthalmology): Changes in size of blood vessels can be seen in retinae of children of this age. A vessel in spasm can be seen to relax at times. There is no way to make this diagnosis other than to observe that the size of the vessel changes from one examination to another or that it changes in size during observation. We seldom get a chance to examine these children with acute glomerulonephritis, but I am sure that we could have identified the contraction of the arterioles in the present case if it had been present.

Summary of Necropsy Findings

Dr. E. D. Warner (Pathology): The kidneys were large and heavy (weight: right, 130 gm.; left, 150 gm.; normal weight: right, 69 gm.; left, 70 gm.). They were edematous and their capsules stripped away easily, leaving pale gray cortical surfaces marked by numerous bright red petechiae. The cortices were thickened, pale, and showed numerous hemorrhagic striations and pin-point dots. The medullary portions were greatly congested and striated. The calices, pelves, ureters, and bladder were normal.

Microscopically, the glomerular tufts were seen to be quite cellular and congested. The glomerular spaces contained numerous epithelial and inflammatory cell crescents. Many contained great numbers of erythrocytes. The glomerular capsules were thickened and edematous, and their lining epithelium was hyperplastic. Some showed early necrosis. The lumens of the convoluted tubules contained blood, hyaline and cellular casts. In some the tubular epithelium was necrotic and had sloughed into the lumen of the tubules. Many of the collecting tubules were filled with blood and casts. The convoluted tubules were dilated in some places. The arterioles showed necrotizing and proliferative arteriolitis in varying degrees. The interstitial tissue was edematous and contained foci of cellulitis and necrosis adjacent to many of the glomeruli and tubules. A few casts of hemoglobin pigment were seen in the tubular system.

The heart was hypertrophied (weight: 150 gm.; normal weight, 100 gm.), and there was 60 cc. of pericardial fluid. The brain was edematous and congested. It weighed 1,430 gm. (normal weight: 1,263 gm.).

Both lobes of the left lung were involved by

pneumonia. The pulmonary tissue was solid in consistency, red and gray in color, and was completely airless. There were patchy areas of consolidation in the right lung also. The alveoli in the consolidated left lung were filled with blood and pus cells. Most of the bronchioles were ulcerated and eroded. Some were completely necrotic and had been destroyed. There was no pleuritis or empyema. The spleen was greatly congested

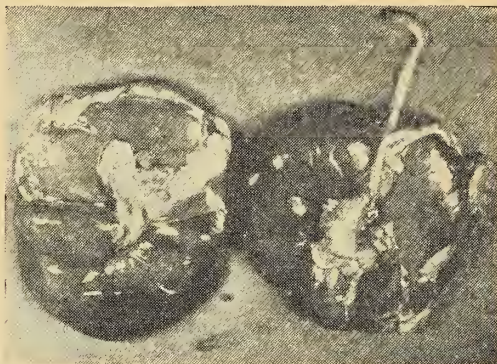


Fig. 1. Gross appearance of swelled kidneys showing petechiae.

(weight: 100 gm.; normal weight, 66 gm.), as was the liver. There were no inflammatory lesions in either organ.

The gastro-intestinal tract displayed two findings. The rectum was filled with very hard, densely packed feces. The entire large bowel proximal to the obstruction was tremendously dilated. The wall was hyperemic and the contents were mainly gas and foul smelling liquid fecal material. In the mucosa of the transverse colon there was a small polypoid adenoma. There was no evidence that this was malignant or that it had produced any mechanical obstruction.

Necropsy Diagnoses

Glomerulonephritis, acute, severe.

Cerebral edema and congestion.

Cardiac hypertrophy.

Visceral congestion.

Lobar pneumonia, left upper and lower lobes, due to hemolytic *Staphylococcus aureus* and *Hemophilus influenza*.

Lobular pneumonia, right lung.

Fecal impaction, rectum.

Severe dilatation of colon.

Papillary polypoid adenoma, transverse colon.

Clinical Discussion

Dr. Boyd: The pneumonia was not suspected. An x-ray examination of the chest was done three days before death and showed no changes at all. He gave an asthenic type of response. A great majority of cases of acute glomerulonephritis recover completely. Many have a stormy course with

cerebral and cardiac difficulties. As high as 70 per cent have carditis, which is the most common cause of death in acute cases. At the present time we have a similar case in our ward who has the chemical findings of uremia but has shown no cerebral symptoms.

Dr. R. Flocks (Urology): Renal decapsulation has helped children with acute nephritis with oliguria and uremia. Two of our recent cases were from the Pediatric Service. The indication is the mechanical relief of pressure on the renal tubules and intrinsic renal vessels. This patient had a good output and showed good concentrating power; therefore, it would seem that renal decapsulation was not indicated. His kidneys, when seen at autopsy, however, revealed increased renal pressure.

Dr. Warner: The renal output in volume was adequate. There is question as to how much tubular degeneration was due to ischemia from intrarenal pressure. In one of the cases which we studied, the kidneys were decapsulated and biopsied seven days before death. There was an astonishing amount of healing of the glomerular lesions in that time. The biopsy showed violent acute glomerulonephritis. If intrarenal pressure contributes to tubular degeneration, then decapsulation is certainly indicated. In another case in which only one kidney was decapsulated, there was great difference between the two kidneys, indicating that intrarenal pressure does contribute to tubular necrosis. I should like to ask Dr. Boyd if he calls this hemorrhagic nephritis because of the antecedent history of infection. If there is not such a history, then what does he call it?

Dr. Boyd: We would then assume it to be the forerunner of chronic diffuse nephritis.

Dr. Warner: If there is an antecedent infection and the course is rapid, then can one call it hemorrhagic nephritis?

Dr. Boyd: Yes. Such patients tend to recover completely unless they succumb to acute cardiac or cerebral complications during the course of the disease.

Dr. L. W. Ide (Internal Medicine): Did the administration of sulfadiazine have any relation to the development of this picture?

Dr. Warner: The kidney in sulfadiazine reaction shows tubular nephritis and interstitial cellulitis with no glomerular lesions. We cannot incriminate sulfadiazine in this case.

Dr. R. A. Dorner (Surgery): Have you tried renal decapsulation in other cases of acute nephritis?

Dr. Flocks: Yes. We have had several other cases. These have improved. The indication has been oliguria or anuria.

Dr. Dorner: How about the patient mentioned previously as being ill at the present time with this disease? Is there indication for decapsulation in his case?

Dr. Boyd: His output is over 1000 cc. daily. He is not yet a candidate for decapsulation.

As to the therapy in these cases, this patient was being given penicillin for the two days preceding his death. I would hesitate to use the sulfa drugs because of the possibility of kidney complications. Supportive cardiac therapy was being given. Digitalis should apparently not be given unless there is definite evidence of myocardial failure.

Dr. E. L. DeGowin (Internal Medicine): We see the same picture in adults. Digitalis is not indicated unless there is cardiac failure. Those dying in the acute stage die cardiac deaths despite digitalis therapy.

Dr. Boyd: Magnesium sulfate lessens cerebral edema and counteracts angio-spasm. Hypertension is apparently on a renin basis with increasing

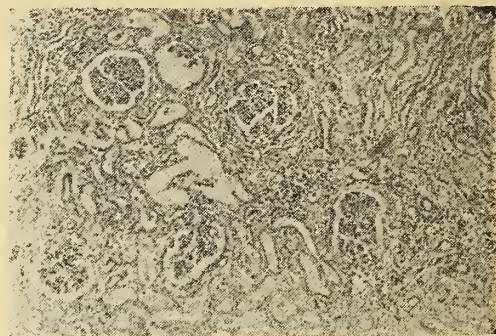


Fig. 2. Photomicrograph of kidney showing acute glomerulitis, dilated and partially necrotic tubules, and interstitial cellulitis.

anoxia of the kidney. There is also peripheral vasoconstriction.

Dr. E. G. Gross (Pharmacology): Magnesium sulfate parenterally has two effects. It depresses the central nervous system and has a peripheral curare-like action. The latter is not a total reaction. There is vascular dilatation with fall in blood pressure. The drug also depresses the heart.

Dr. Warner: What is the significance of the cerebral edema?

Dr. A. L. Saks (Neurology): This term is used loosely to mean brain swelling. It is easy to say that the brain is swelled or edematous, but the exact terminology is vague. Very little is known about this condition because it is difficult to observe clinically, and at autopsy one cannot always determine precisely the source of the so-called brain swelling. In many cases, does one deal with intracellular or extracellular edema?

The situation is complicated further by the fact that a brain will take up fluid after death. Furthermore, formalin fixation increases the total weight of the brain by about 10 per cent. Personally, I believe that an important item to consider in these cases is the state of the vascular system.

Dr. Leinfelder: I know Dr. Sahs' opinion of edema of the brain. There is an encephalopathy in some cases of hypertension, and this may be with or without uremia. Uremia itself is no reason for this, for patients with obstructive lesions of the urinary tract do not show fundus changes or have symptoms of encephalopathy. In patients with elevated blood pressure and uremia, edema of the nerve head (with or without edema of the retina) indicates increased intracranial pressure which is the result of edema of the brain.

Dr. Warner: The brain was swelled in this case.

Dr. Leinfelder: The edema may be relieved by either spinal tap or the giving of hypertonic fluids intravenously, and regression of the edema of the nerve head will occur.

Dr. F. E. Simpson (Pediatrics): Will lumbar puncture in cases of this type be dangerous?

Dr. Sahs: Ordinarily it will do no harm. In brain tumors of the posterior fossa, a cerebellar pressure cone may form from relief of pressure from below.

RESOLUTION*

Whereas, a joint conference has been held by the Members of the Monroe County Medical Society, and the Members of the Monroe County, Iowa, Board of Supervisors, in the office of the Monroe County Board of Supervisors, Albia, Iowa, under date of December 24, 1946, for the purpose of discussing and devising a plan which would be agreeable to the physicians of the County and the Board of Supervisors, relative to the admission of medical indigent patients to the State Hospital at Iowa City, Iowa, and

Whereas, it was the unanimous opinion of members of said groups that admission of said patients to the said Hospital is primarily for laboratory and teaching purposes, and not for the care of indigent cases as such, and

Whereas, it appears that in the past many patients admitted to the University Hospital at Iowa City, Iowa, from Monroe County, Iowa, were capable of being treated by resident physicians of said County, and for which service County funds could have been used, providing the patient was entitled to such service at County expense, and

Whereas, the members of said Monroe County Medical Society are willing and able to perform professional services for the care of said patients, and

after a thorough study and discussion of the many phases affecting the treatment of indigent cases, it appears that a Committee should be appointed from the members of said Society to act as an Advisory Board to pass upon the medical eligibility of all indigent cases seeking admission to the State University Hospital, Iowa City, Iowa, for medical, surgical, obstetrical and dental treatment or care, from Monroe County, Iowa, and, likewise, to pass upon the medical eligibility of all indigent cases desiring medical services from physicians other than those who are residents of Monroe County, Iowa, and not affiliated with the State University Hospital, Iowa City, Iowa, therefore

Be It Resolved, by the Members of the Monroe County Medical Society, Monroe County, Iowa, that a Committee of three (3) members from said Society be appointed by the President of said Society, of which he shall be a member, to act as an Advisory Board, whose duties shall be to pass upon the medical eligibility of all indigent cases seeking admission to the State University Hospital, Iowa City, Iowa, for medical, surgical, obstetrical and dental treatment or care, and, likewise, to pass upon the medical eligibility of indigent patients seeking medical attention from physicians who are not residents of Monroe County, Iowa, and not affiliated with the State University Hospital, Iowa City, Iowa, and

Be It Further Resolved, that the Chairman of the said Medical Advisory Board shall sign all admission applications, as well as the physician referring the case, and that all applications for admission to the State of Iowa University Hospital, or for medical services by physicians who are not residents of Monroe County, Iowa, must be approved by said Advisory Board and signed by the Chairman, as well as the referring physician in charge of the individual case; and that the recommendations for admission to the State University Hospital, Iowa City, Iowa, shall be in charge of the said Advisory Board, and the referring physician, and not at the discretion of the Director of Relief or the Overseer of the Poor of Monroe County, Iowa, and

Be It Further Resolved, that said Board shall function as a consultant Committee for services to the needy blind, the old age assistance recipients and to dependent children, and that a copy of this Resolution be certified to the Board of Supervisors of Monroe County, Iowa; to the Director of Old Age Assistance of said County; to Ann Gordon, Supervisor of Admissions for indigent patients at the State University Hospital, Iowa City, Iowa, and to the Iowa State Medical Society for possible use in the Open Forum Column of the Medical Journal of said Society.

Dated at Albia, Iowa, this 10th day of January, 1947.

MONROE COUNTY MEDICAL SOCIETY

Attest: H. J. RICHTER, M.D., *Chairman*
T. A. MORAN, *Secretary*.

*Adopted by the Monroe County Medical Society at its regular meeting April 11, 1947.

STATE DEPARTMENT OF HEALTH



SEASON FOR ROCKY MOUNTAIN SPOTTED FEVER

With the approach of warm weather and of conditions favoring rapid increase in the tick population, physicians in all parts of Iowa are advised to bear in mind the possibility of occurrence of Rocky Mountain Spotted Fever in one or more of the patients under their care.

The disease is usually sporadic in nature and because of this, may be overlooked or regarded as one of the more common communicable diseases.

Reported Morbidity and Mortality in Iowa

C. N. Freligh, M.D., of Waucoma in Fayette County is credited with having recognized and reported the first case of Rocky Mountain Spotted Fever in Iowa in June, 1933. During the fourteen year period 1933-1946, reported cases of the disease in this state totaled 131, including 22 deaths, a mortality of 16.8 per cent.

During 1946 no deaths from this cause were recorded with the Department's Division of Vital Statistics; two cases were reported for the year.

Reported Morbidity in the United States

According to the "Health Officers' Weekly Statement" released by the United States Public Health Service, cases of Rocky Mountain Spotted Fever totaling 563 were reported in the nation as a whole. The following table shows the number of cases as notified from various sections of the country.

ROCKY MOUNTAIN SPOTTED FEVER IN THE UNITED STATES—1946

Area	No. of Cases	Reporting Most Cases
New England	1	Mass.
Middle Atlantic	53	Pa. (20), N. J. (17), N. Y. (16)
East North Central..	62	Ill. (41), Ind. (12)
West North Central..	16	Mo. (11), Ia. (2), S. D. (2)
South Atlantic	271	Va. (93), Md. (46), N. C. (66)
East South Central..	64	Tenn. (33), Ky. (24)
West South Central..	36	Okla. (28)
Mountain	43	Wyo. (14), Colo. (10)
Pacific	17	Ore. (8), Calif. (5)
Total	563	

Two Iowa Cases

On May 8, 1945, a 2 year old boy in Bremer County, northeastern Iowa, accompanied his parents on a picnic in the woods. Two days later, while combing the child's hair, the parents found a wood tick imbedded in the scalp. The tick, alive, was removed with difficulty, crushed underfoot and the incident quite forgotten. Eight days later the child developed nausea, vomited and had fever with delirium through the night. A macular rash appeared on the third day on legs, arms and body. The rash resembled the early eruption of chickenpox, as well as that of measles and epidemic meningitis. On a serum specimen forwarded to the Department's State Hygienic Laboratory, the Weil-Felix test showed positive agglutination in a dilution of 1-160, confirming the clinical diagnosis of Rocky Mountain Spotted Fever.

One June 29, 1946, a physician in Ottumwa, Wapello County, reported the same disease in a boy, aged 11, who lived near the edge of the city. Two weeks after having been bitten by a tick, the boy developed high fever with headache, malaise and loss of appetite. Three days later, a maculopapular rash was observed on forearms and legs, extending then to the body. The Weil-Felix agglutination reaction on a serum specimen taken fourteen days after onset of illness was strongly positive (1-320) for Rocky Mountain Spotted Fever.

Hyperimmune Rabbit Serum in Therapy

Hyperimmune serum is obtainable for treatment of the severe case of spotted fever. To be effective serum must be administered within twenty-four or thirty-six hours after appearance of the rash.

Spotted Fever Vaccine

The State Department of Health is supplied with vaccine for active immunization against Rocky Mountain Spotted Fever through courtesy of the Rocky Mountain laboratory of the United States Public Health Service at Hamilton, Mont.

The vaccine is distributed without cost, designed for individuals who live where the disease is prevalent and whose occupation brings them into frequent contact with the wood tick.

RINGWORM OF THE SCALP IN IOWA

During the month of April, 1947, a letter was forwarded to dermatologists and health officers in county seat cities and cities with populations of over 1,000 in the state to inquire regarding the current prevalence of ringworm of the scalp among immature children.

The accompanying map shows the distribution by counties of 555 cases of ringworm of the scalp in Iowa. Reports from counties in northeastern Iowa were assembled by the District Health office in Decorah through efforts of the director, Harry H. Ennis, M.D., in cooperation with attending physicians and local health officers. The reported occurrence in urban centers include cases discovered among school children with the aid of the Wood light, inspection being carried out by local and public health nurses under medical supervision.

When ringworm of the scalp threatens to get out of hand, boards of education are advised to purchase one or more units of the Wood light to aid with recognition and control. Information with reference to procuring of the needed equipment may be secured through the State Department of Health.

INCREASE IN BLUE CROSS MEMBERS HOSPITALIZED 1946 OVER 1944

While membership in the Des Moines Blue Cross Plan increased 87 per cent in 1946 over the 1944 figure, the number of hospital cases for the same period increased 132.87 per cent. The cost per day in 1944 was \$5.86. Up to June 1, 1946, hospital costs per day had risen to \$7.80 and from June 1 to the end of the year rose still higher to \$8.64 per day.

In 1944, the Des Moines Plan had 17,515 members

hospitalized. In 1946 the total was 40,788. The percentage of cases falling in the different diagnoses used by the Blue Cross analysis by groups of diseases, in all instances except three, showed an up-trend. The exceptions were those of infections and parasitic diseases, diseases of the digestive system and obstetric care. During 1944, 959 cases of infectious diseases made up 5.47 per cent of all cases, while in 1946 cases of this same group numbered 2,148 but were only 5.26 per cent of the total, or .21 per cent less. Diseases of the digestive system showed the greatest percentage of decrease. The 1944 cases amounted to 5,521 or 31.5 per cent. However, there were 10,860 of these cases in 1946 which represented 26.6 per cent of all, a decrease of 4.9 per cent. While cases for obstetric care more than doubled in 1946 over 1944, still the percentage of all in 1946 was actually 1.53 per cent less. Obsteric care cases totaled 2,368 in 1944 or 13.5 per cent of all, and two years later there were 4,892 cases or 11.99 per cent.

The greatest increase in percentages of cases in 1946 over 1944 were found to be in those diagnosed under diseases of the genito-urinary system with 1,851 cases in 1944 to 5,171 in 1946, or 10.56 per cent to 12.67 per cent, an increase of 2.11 per cent. Second in increases were the diseases of the circulatory and respiratory systems including heart cases. In 1944, 2,287 cases represented 13.05 per cent and in 1946, 5,976 cases were 14.65 per cent or an increase of 1.6 per cent. Cases diagnosed as cancers and other tumors accounted for 444 cases in 1944 or 2.53 per cent of all for that year, while in 1946, 1,286 such cases were 3.15 per cent of the total, a .62 per cent increase.

CHANGE OF ADDRESS

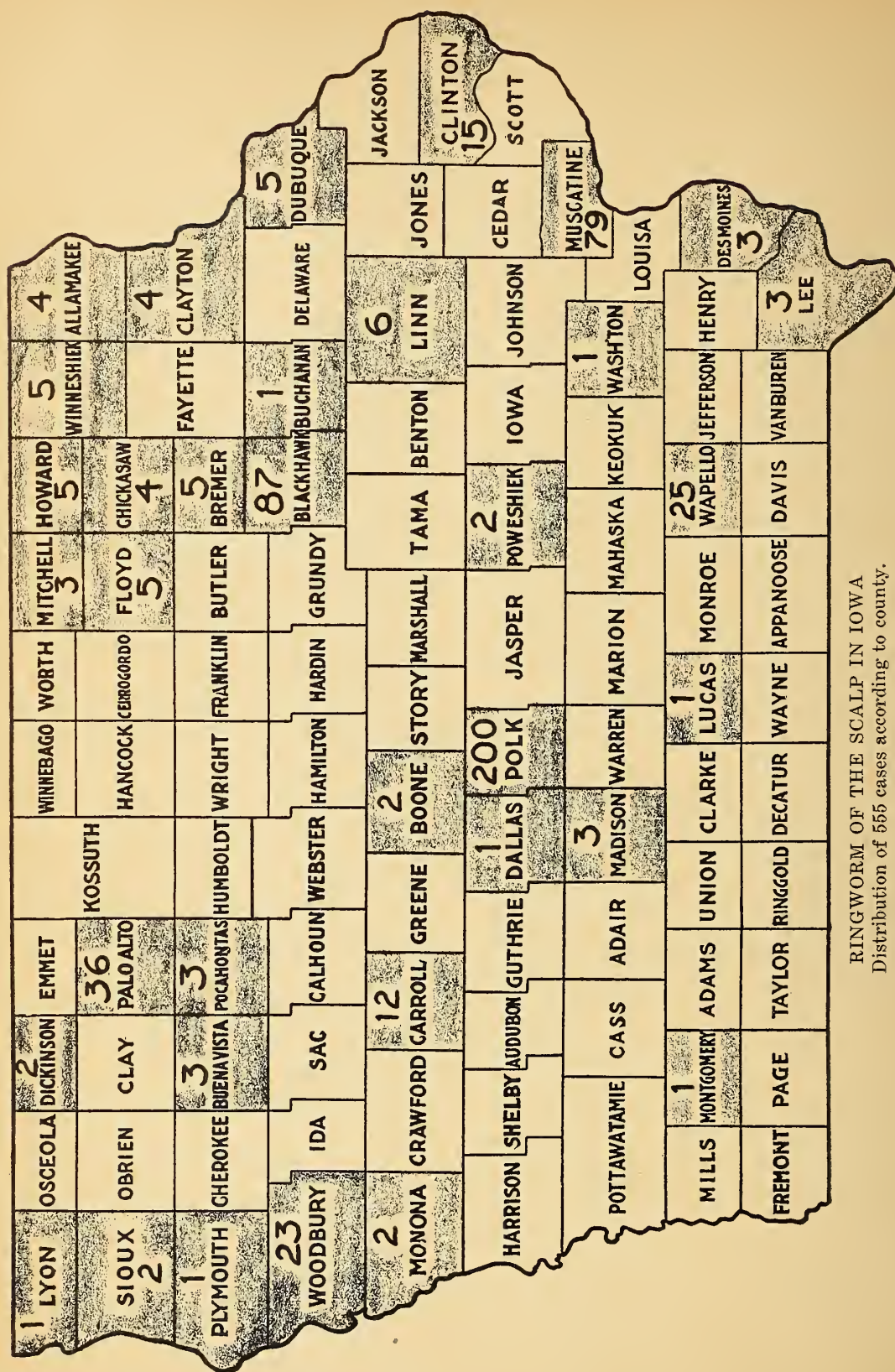
Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 505 Bankers Trust Bldg., Des Moines 9, Iowa.

MORBIDITY REPORT

Diseases	April '47	March '47	April '46
Diphtheria	2	9	20
Scarlet Fever	145	228	210
Typhoid Fever	4	1	23*
Smallpox	0	1	2
Measles	859	322	702
Whooping Cough	54	76	66
Brucellosis	33	134	8
Chickenpox	336	475	162
German Measles	5	3	12
Influenza	6,273	16,864	0
Malaria	1	2	29
Meningitis, Meningococcus	8	6	5
Mumps	67	307	244
Pneumonia	20	47	12
Poliomyelitis	1	0	2
Tuberculosis	65	68	59
Gonorrhea	102	112	225
Syphilis	115	148	154

*21 of the 23 cases were delayed reports.

Most Cases Reported From
Appanoose, Worth
Linn, Polk, Buchanan, Clinton
Polk, Scott, Wapello, Webster
.....
Des Moines, Dubuque, Polk
Black Hawk, Greene, Polk, Winnebago
Taylor, Webster, scattered
Black Hawk, Dubuque, Mills, Woodbury
Johnson, Marshall, Washington
Buchanan, Dubuque, Harrison, Mahaska
Lucas
Clinton, Pocahontas, Story, Washington
Black Hawk, Clinton, Delaware, Polk
Black Hawk, Henry, Marion
Polk
For the State
For the State
For the State



RINGWORM OF THE SCALP IN IOWA
Distribution of 555 cases according to county.

The JOURNAL of the

Iowa State Medical Society

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Vol. XXXVII JUNE, 1947 No. 6

100 Years of Medicine

As a physician, I am proud to be a member of a respected profession.

I revere the memory of our pioneers who have distinguished themselves in medicine during the past hundred years. Their accomplishments have enabled me to treat my patients with greater skill in the constant battle with disease and death. My appreciation of responsibility to my patients is largely due to the perseverance and human dignity displayed by my forebears in the medical fraternity.

I feel humble in my contribution to the armed services of my country during the recent war in which the efforts of my profession reduced the mortality among the injured so greatly.

I uphold the tradition that no individual who applies to me should be denied the benefit of medical care and advice because of the inability to recompense me with money. My service on the staff of charity clinics is merely another indication that my ability is worthy of service to my community.

I look with distrust on bureaucracy and political infiltration because they distort the cherished inviolacy of the relationships with my patients.

I rejoice in the fellowship offered me through working with other members of my profession because there is no other group of men wherein dwells such unity of purpose and fraternity of spirit.

I acknowledge how sacred and august a thing it is to worship the Source and Sovereign of the

Universe by endeavoring to bless and benefit humanity.

I exult in the centennial of organized medicine. I pray for strength in the rededication of my obligations to my profession and to my fellow men.

Medical Service Members

At a meeting of the publication committee of the JOURNAL during the annual convention in Des Moines in April, 1947, it was decided that members of Iowa Medical Service be given special designation in connection with the roster of membership of the State Medical Society to be published in the July issue of the JOURNAL. Hence, a cross will be inserted preceding the name of each member of Iowa Medical Service in the roster. The opportunity is still available for every member of the State Society who has not affiliated with Iowa Medical Service to join at once.

Vagus Resection

Vagotomy, or more accurately vagus resection, is receiving current attention as another surgical approach to the problem of peptic ulcer. Surgery is not the ideal treatment of peptic ulcer and is indicated only for the complications of peptic ulceration, failure of medical management, or when the question of malignancy arises.

The elective surgery of intractable peptic ulcer is directed toward the underlying "acid-pepsin factor." The presence of free hydrochloric acid in the gastric juice is thought necessary to the production of peptic ulceration.

This free hydrochloric acid is secreted by the fundus of the stomach in response to certain stimuli. One of these is thought to be humoral in nature and is centered about the antrum of the stomach. Gastric resection modifies the "acid-pepsin factor" by removing the gastric antrum and a portion of the acid-secreting mucosa. Another stimulus to acid production is mediated through the vagus nerves in response to psychic factors. This "psychic secretion" of free hydrochloric acid is modified by resection of the vagi.

The operation of vagus resection, either by the trans-thoracic or sub-diaphragmatic approach, is not difficult and seems to be a helpful adjunct in the treatment of peptic ulceration. The sub-diaphragmatic route offers the advantage of inspecting the lesion and affords the surgeon an opportunity of carrying out other procedures which might be indicated.

Certain undesirable side effects are occasionally noted following vagus resection; chief among

these are gastric and intestinal atony. This definitely complicates any pyloric obstruction that may be present.

The permanent effects of vagus resection on peptic ulceration are yet to be evaluated. There is accumulating evidence that the full influence of this operation on the "acid-pepsin factor" is not permanent, and that there is a tendency toward a return to preoperative values after the lapse of months. There have been cases of gastroduodenal hemorrhage and perforation following vagus resection.

Dragstedt and his associates have had considerable experience with this procedure, and it would seem logical to await their final evaluation of the operation before advising it indiscriminately. Adequate partial gastrectomy is a known entity in the treatment of intractable peptic ulcer and should not be discarded lightly. However, vagus resection would seem definitely indicated in one type of lesion, the jejunal ulcer which occasionally follows partial gastrectomy. If the gastric antrum has been completely removed and adequate resection carried out, the obliteration of the "psychic secretion" by vagus resection would seem a more physiologic and less formidable procedure than re-resection for jejunal ulcer.

Cancer Control in Iowa

Growing interest in cancer control has resulted in increased activity on the part of the American Cancer Society and the United States Public Health Service in Iowa. This program has been in operation for several years with emphasis placed on statistical research based on proper records, education of the public, education of the medical profession, and provision of adequate facilities for diagnosis and treatment where such facilities are as yet not available. The latter provision is to be developed in accordance with the standards established by the American College of Surgeons regarding "Cancer Clinics" operated with the approval of the local medical society.

The report of the Iowa Division of the American Cancer Society presented at the annual meeting of the House of Delegates of the Iowa State Medical Society included the announcement that \$5,000 had been granted to the State University of Iowa for research purposes in cancer control. This report stated that a total of \$120,000 was received during 1946 from the April cancer drive. From this fund \$48,309.67 was paid to the American Cancer Society. A budget of \$53,855 was set up as follows: administration expense, \$4,279.20; capital expense, \$1,350; public education, \$12,800; medical education, \$6,500; activities and

approved projects, \$10,000; campaign expense, \$5,000; and a contingency fund of \$13,925.80. The actual expenditures were as follows: administration, \$3,143.33; capital expense, \$444.77; public education, \$4,613.76; medical education, \$1,480; campaign expense, \$2,400; and the University of Iowa for research purposes, \$5,000.

With such a beginning, the program for 1947 will allow much expansion. The American Cancer Society program has been approved by the Council on Medical Service of the American Medical Association and emphasizes education, research and service. The United States Public Health Service has been allotted \$2,500,000 for the year ending July 1, 1947, to increase its activity in the field of cancer control. It is well understood that the entire program is definitely experimental. Its success will depend upon the fact that it will be maintained upon a professional level, that it will assist and not compete with practitioners of medicine and that it will be carried out with the approval of the county medical associations.

The cooperation of the entire profession is desired in order that this project will succeed in Iowa.

NATIONAL CONFERENCE OF COUNTY MEDICAL SOCIETY OFFICERS

A special conference for county medical society officers and all others interested will be held in Atlantic City, N. J., Sunday, June 8, 1947, immediately preceding the American Medical Association centennial convention. It is planned that the laying of the groundwork for better relations between the average doctor and the American Medical Association will be laid at this meeting.

In committee meeting March 30 it was agreed that the conference should concentrate on local problems; should last three hours; that it should move with snap and precision; and that, insofar as is possible, everyone present should have the opportunity of finding out just what goes on and how the facilities of medical organization—national, state and local—may be made available to the individual doctor.

The major fields of consideration will be professional relations problems, medical service problems, and public relations problems.

AMERICAN HEART ASSOCIATION MEETING

The annual meeting of the American Heart Association will be held at the Hotel President, Atlantic City, N. J., on June 6-8, 1947, prior to the annual session of the American Medical Association. Members of the medical profession and other interested persons may attend the scientific sessions on June 6 and 7.

NEWS NOTES

from the

Committee on Medical Service and Public Relations

Health Legislation

Health legislation enacted by the recent session of the Iowa legislature was, on the whole, satisfactory. It was the result of sympathetic and careful consideration by the legislature of the many problems presented and the cooperative attitude of the Governor.

The most important problem was the care of our mentally ill. By House Joint Resolution a "Mental Health Authority" was designated through which the United States Public Health Service can deal in connection with the benefits that the state of Iowa can derive from the provisions of the National Mental Health Act. This will provide funds for the development of more effective methods of prevention, diagnosis, and treatment of mental disorders. A senate bill provides for the appointment of a director of mental institutions by the board of control. The director shall be a reputable physician admitted to practice medicine in this state and psychiatrist with at least five years actual experience in the care and treatment of persons with mental diseases. This director has broad powers concerning the housing, treatment and qualifications of physicians and nurses employed in all state mental, feeble-minded and epileptic hospitals. Authority is also given the director to check all public and private institutions receiving and caring for the insane, mental defectives and epileptics.

The writer agrees with many physicians throughout the state that this is not the final solution of the care of our mentally ill. With the knowledge gained during the next two years let us hope that the next legislature will give Iowa a plan for the care of these patients second to none.

The tuberculosis bills correct many errors in our present laws. One bill provides that the expense of free treatment in a state sanitarium shall not be a lien on the patient's home. Another provides that the tubercular patients in insane hospitals must be segregated. Still another provides that the superintendent of the state sanitarium must have practical experience in the field of tuberculosis.

A county Board of Health consisting of the county auditor, chairman of the board of supervisors and the county superintendent of schools is established to replace the township boards of health. However, township trustees may organize as a local board of health if they desire. The county board of health will not replace the board of health of the larger cities.

Three hospital bills were enacted. A hospital enabling act provides for a survey of hospital facilities and makes federal funds available for hospital construction. A second bill provides for the licensing and regulation of hospitals and provides for a licensing board. The third bill provides for the licensing and regulation of nursing homes by the State Department of Health.

An increase in the medical allowance for workman's compensation from \$600 to \$800 is provided in another bill. This bill also excludes nursing care from limitations and provides for nursing care to be paid in full.

The adoption law was greatly improved.

Your committee on legislation must be given much credit for its fine work in cooperating with the sponsors of this health legislation. The members have done an outstanding job of public relations. Few realize the amount of time this committee work consumed, not only in assisting in the writing of the bills but in assisting the sponsors to handle the bills in the legislature.

ANNUAL MEETING, AMERICAN COLLEGE OF CHEST PHYSICIANS

The thirteenth annual meeting of the American College of Chest Physicians is scheduled to be held at the Ambassador Hotel, Atlantic City, N. J., June 5 to 8. An interesting scientific program has been planned for this meeting. Prominent speakers from other countries will present papers.

The oral and written examinations for Fellowship will be held on the first day of the meeting, June 5. Applicants for Fellowship in the College who plan to take these examinations should communicate at once with the Executive Secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Ill.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. FRED MOORE, Des Moines
President-elect—MRS. A. G. FELTER, Van Meter
Secretary—MRS. CHARLES A. NICOLL, Panora
Treasurer—MRS. NOBLE IRVING, Des Moines

CONVENTION NOTES

The eighteenth annual convention of the Woman's Auxiliary to the Iowa State Medical Society was held at Hotel Savery in Des Moines, April 17 and 18, 1947, with Mrs. M. H. Brinker of Jefferson, president, presiding. A luncheon and meeting of the executive board was held April 16 at Hotel Savery.

Mrs. George H. Watters of Des Moines gave the invocation. Mrs. Floyd A. Springer, president of Polk County Woman's Auxiliary, welcomed the convention, and Mrs. Fred Moore, president-elect of the Woman's Auxiliary to the Iowa State Medical Society, responded.

Minutes of the last meeting were read and approved. Mrs. Brinker reported a membership of 450 with 79 members at large. She urged more memberships at large to improve the report which will be given at the national meeting in June and stated that "County Auxiliaries are our State Auxiliary." She attended two conferences in Chicago and the American Medical Association meeting in San Francisco and hopes to attend the national meeting at Atlantic City in June when the American Medical Association will celebrate its one hundredth anniversary and the Auxiliary its twenty-fifth.

An excellent address was given by Mrs. Jesse D. Hamer of Phoenix, Ariz. Mrs. Hamer is president of the Woman's Auxiliary to the American Medical Association. Her personal charm, her level thinking and fine ability to express herself were an inspiration to all who heard her. A condensation of her speech will be found under a separate heading.

Mrs. W. R. Hornaday reported a balance on hand of \$438.57 in the Nurses' Loan Fund. Since it costs \$300 to educate a nurse, the State Auxiliary has the means to train one girl or to start three girls with \$100 loans.

Mrs. W. A. Seidler, reporting on the hope for a Youth Commission set-up in Iowa, stated that "crime is on the increase." There are 140,000 people in the United States between the ages of 10 and 30 years afflicted with dementia praecox. She urged that Auxiliary members keep informed on the progress of a Youth Commission and support it when it is eventually established.

At the luncheon Dr. R. L. Parker, president of the Iowa State Medical Society, reported that all of the counties in Iowa had medical societies, but that there were only fifteen Auxiliaries. He hoped there

would be extensive organization during 1947-48. Dr. H. A. Spilman, president-elect, concurred.

Mrs. C. A. Nicoll, secretary, presented each county president with a rose after she had given her report.

Mrs. S. S. Westly stated that \$204,240 would be expected from Iowa this year to further cancer research. Sixty per cent of the fund will remain in Iowa. Ninety-four counties have organized their campaigns. One out of eight people develop cancer now as opposed to the former figures of one out of ten.

Mr. Clyde Carter, Director of Recreation, Iowa Society for Crippled Children, gave a practical talk with specific suggestions as to how Auxiliary members might contribute to the physically handicapped. Handicaps need a sales outlet for their handiwork. Teachers who might operate with emergency licenses are desperately needed to teach handicraft. Registries could be set up so that toys, wheelchairs and other equipment might be loaned many times. Campships can be sponsored and names of prospects for camp can be forwarded to the Society as well as names of shut-ins who need help. There was a round of applause when Mr. Carter announced that the hospital school bill had passed that morning, and even though the hospital will have only fifty beds, it is a brave beginning in the right direction.

Mrs. H. I. McPherrin gave a lovely "In Memoriam" service for members deceased during the year and followed it with a motion which was carried proposing that instead of the traditional use of flowers during the service, \$5 be placed in the Nurses' Loan Fund.

On Friday morning Mrs. Fred Moore, president-elect, urged doctors' wives to obtain specific information on issues pertaining to medicine; to read *The Bulletin* and "The News Notes" in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. She stressed the fact that intangibles are probably more essential but not as easy to achieve as the practical things. She stated that a budget is necessary to distribute vital information to all Auxiliary members. Doctors and their wives need to take the lead in medical affairs and not shift their responsibility to lay groups.

Mrs. Moore proposed that a three-point program recommended by the executive board be adopted by the convention. The motion carried. The program is: (1) that we actively participate in the program of the American Cancer Society on the local and

state levels as far as possible; (2) that the student nurses' recruitment program for 1947 be endorsed and incorporated into the active programs of the county auxiliaries; (3) that we again endorse and actively participate in the Iowa Program for Handicapped Children.

Mrs. S. S. Westly, chairman, reporting for the nominating committee, proposed the following group of officers who were elected: president, Mrs. Fred Moore, Des Moines; president-elect, Mrs. A. G. Felter, Van Meter; first vice president, Mrs. J. R. Chittum, Wapello; second vice president, Mrs. E. H. Sibley, Sioux City; third vice president, Mrs. F. A. Rolfs, Aplington; fourth vice president, Mrs. Max Armstrong, Newell; secretary, Mrs. C. A. Nicoll, Panora; treasurer, Mrs. Noble Irving, Des Moines; directors, Mrs. J. C. Decker, Mrs. S. S. Westly and Mrs. M. H. Brinker.

An outstanding feature of the Friday luncheon was a style show conducted by Mr. Charles Cownie in which several doctors' wives acted as models.

Convention delegates will be selected from the following group who expect to go to Atlantic City: Mrs. M. H. Brinker, Mrs. S. S. Westly, Mrs. J. C. Decker, Mrs. C. T. Maxwell, Mrs. Fred Moore, Mrs. J. R. Chittum, Mrs. James Reeder, Mrs. H. W. Smith.

Due to illness, Mrs. A. G. Felter, president-elect, was unable to be present at installation which was conducted by Mrs. W. R. Hornaday.

A complete list of chairmen of state committees will appear in a forthcoming issue.

The following past presidents of the State Auxiliary attended the convention: Mrs. M. N. Voldeng, first president; Mrs. W. A. Seidler, Mrs. E. A. Hanske, Mrs. E. T. Warren, Mrs. W. R. Hornaday, Mrs. F. W. Mulsow, Mrs. W. S. Reiley, Mrs. J. C. Decker, and Mrs. S. S. Westly.

MRS. K. M. CHAPLER,
Chairman, Press and Publicity

SUGGESTIONS FROM MRS. JESSE D. HAMER, PRESIDENT OF THE WOMAN'S AUXILIARY TO THE A.M.A.

"We are organized for unselfish service."

"Don't encourage any group to organize against its will."

"There is nothing more deadly than an organization with nothing to do."

"Evaluate your projects and get the approval of the Advisory Council before you act, for Auxiliary projects must fall within the A.M.A. objectives."

"The Auxiliary is a training school where we get the information we need. The doctors are too busy, but their wives can learn to see both sides of issues, and they can become fine public relations mediums."

"Little groups affect the whole. Promote fellowship. We need unity now more than any time in the history of the world."

"Make full use of the program facilities available through the A.M.A. The Bureau of Health Education has added two new staff members, an M.D. and a physical director who will help set up better school

health programs on request and with the approval of the county medical society.

"Encourage Health Institutes. Take *Hygeia* and *The Bulletin* and do keep informed by reading both magazines.

Mrs. Hamer reported the following achievements of the past year in the National Auxiliary.

There is now a membership of over 30,000. Two new states were added leaving only Maine, Vermont, Massachusetts, and Nevada unorganized. A representative of the National Auxiliary will have a seat at the national N.E.A. meeting. The Auxiliary headquarters are now in the A.M.A. building in Chicago. There will be a section on the Woman's Auxiliary in the history of the A.M.A. which is being compiled in commemoration of the one hundredth anniversary of that organization. There is a recording about the Auxiliary on the "Medicine Serves America" series which will be used by the National Broadcasting Company. A definite program is being planned for the Auxiliary and will be presented at the national meeting in Atlantic City in June.

There is an acute need for more young women to enter nursing so that the 1,300 schools in the United States may be filled to capacity. The A.M.A., the National Nurses' Association, the American Hospital Association, and the National Council on Advertising are helping to further this project. The National Association for the Prevention of Infantile Paralysis has set up an \$83,000 scholarship fund to train medical librarians. This field might prove interesting to any girl who enjoys typing and dictation.

Mrs. Hamer urged that members at large have some real work to do in and for the Medical Auxiliary. She recommended that the Auxiliary promote the nurse recruitment program and complimented Woodbury County, especially for the sales outlet provided for the handiwork done by spastics in that area. She stressed that each Auxiliary member be informed on the Blue Cross and the Iowa medical prepayment plan. She has found through her own experience that the medical trustees and the Auxiliary Board make a fine working team and that the councilor district plan has excellent possibilities in unorganized counties.

RESOLUTIONS

Whereas, the Woman's Auxiliary to the Iowa State Medical Society has been the recipient of many courtesies:

Be it resolved, that the Woman's Auxiliary expresses its appreciation to those who have extended their hospitality to us, to the convention committee chairman and co-chairman, Mrs. James E. Dyson and Mrs. Floyd A. Springer, president of Polk County Medical Auxiliary and chairman of local publicity; and

Be it further resolved, that appreciation be ex-

(Continued on page 262)

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. WALTER L. BIERRING, Des Moines, Chairman

DR., HENRY G. LANGWORTHY, Dubuque, *Secretary*

DR. CHARLES L. JONES, Gilmore City

DR. CLYDE A. HENRY, Farson

DR. LESTER C. KERN, Waverly

BURDETTE D. LAFORCE, M. D.

1869-1947

MEMORIAL

Dr. Burdette D. LaForce* was born at Mt. Pleasant, Iowa, in 1869, and died at his home, 1559 Mar Vista Avenue, Pasadena, Calif., March 13, 1947, after an illness of several years. The direct cause of his death was angina pectoris.

When he was five years old his family settled in Agency City, Ia., where he received his early education. He studied medicine and was graduated from the Rush Medical College, Chicago, in 1893. Soon after receiving his degree, he established an office in Ottumwa, Iowa, specializing in OALR.

In the early days of his practice, Dr. LaForce recognized the urgent need for an instrument that would remove adenoids without the danger of stripping the mucous membrane from the pharyngeal vault, as well as to guard against the accidental lodgement of loose adenoidal tissue in the larynx or the nares or to prevent it from being swallowed. His masterful knowledge of the anatomic parts involved and his clever ingenuity resulted in the production of the famous LaForce Adenotome in 1900. He gave this valuable instrument to the medical profession and humanity without a cent of profit to himself, as the instrument was never patented. However, on May 19, 1914, he did procure a patent to prevent manufacturers from changing his Haemostat - Tonsillectome, which was designed for bloodless enucleation of tonsils by combining a tonsil haemostat and a tonsil knife in one automatic instrument. But he accepted not a penny of profit from this or any other of his inventions, although they cost him much labor and money. This may well be judged by the list of instruments he designed—the Adenotome, the Haemostat-Tonsillectome, the Tonsil Su-

ture Knot-tier, the Tonsil Suture Needle and the Spud.

Dr. LaForce practiced medicine in Ottumwa, Ia., about twenty-five years. He did postgraduate work in Europe and was a frequent visitor at many of the large medical centers of this country. During the years of his practice, he was active in the affairs of organized medicine and was a member of his county, state and national societies as well as a Fellow of the American College of Surgeons.

Because of bad health, Dr. LaForce gave up practice in 1930 and removed to Pasadena, Calif. His fiftieth wedding anniversary was celebrated Feb. 2, 1947, a little more than a month before his death.

Besides his wife, he is survived by one daughter, Mrs. Newman H. Bellis of Altadena, Calif.; two grandsons, Lt. Alan R. MacLeod of the U. S. Navy, stationed at Whidby Island, Wash., and Jack MacLeod of North Fork, Calif.; a great granddaughter, Kathleen Ann MacLeod; and two brothers, Dr. E. F. LaForce of Burlington, Ia., and Charles R. LaForce of South Pasadena, Calif.

Walter L. Bierring, M.D.

THE AMERICAN CONGRESS OF PHYSICAL MEDICINE

The American Congress of Physical Medicine will hold its twenty-fifth annual scientific and clinical session Sept. 2 to 6 inclusive at the Hotel Radisson, Minneapolis. Scientific and clinical sessions will be given the days of Sept. 3, 4, 5 and 6. All sessions will be open to members of the medical profession in good standing with the American Medical Association. In addition to the scientific sessions, the annual instruction courses will be held Sept. 2, 3, 4 and 5. These courses will be open to physicians and the therapists registered with the American Registry of Physical Therapy Technicians.

*Because of Dr. LaForce's valuable contribution to the furtherance of medicine through his invention of instruments, the Journal deviates from its usual practice of including only obituaries of past presidents of the Society to pay tribute to him.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- CLINICAL HEMATOLOGY**—By Maxwell M. Wintrobe, M.D., Ph.D., Professor of Medicine, University of Utah, School of Medicine, Salt Lake City, Utah; formerly Associate in Medicine, Johns Hopkins University; Associate Physician, Johns Hopkins Hospital, and Physician-in-Charge, Clinic for Nutritional, Gastro-intestinal and hemopoietic disorders, Baltimore, Maryland. Second edition, thoroughly revised. Lea & Febiger, Philadelphia, 1946. Price, \$11.
- EXPERIENCES WITH FOLIC ACID**—By Tom D. Spies, M.D., Associate Professor of Medicine, University of Cincinnati School of Medicine, Director of the Nutrition Clinic, Hillman Hospital, Birmingham, Alabama. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.
- NUTRITIONAL AND VITAMIN THERAPY IN GENERAL PRACTICE**—By Edgar S. Gordon, M.D., Ph.D., Associate Professor of Medicine, University of Wisconsin. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.
- PRINCIPLES AND PRACTICE OF OBSTETRICS**—By Joseph B. DeLee, M.D., Late Professor of Obstetrics and Gynecology, the University of Chicago; Consultant in Obstetrics, Chicago Lying-in Hospital and Dispensary; and J. P. GREENHILL, M.D., Attending Obstetrician and Gynecologist, Michael Reese Hospital; Obstetrician and Gynecologist, Associate Staff, the Chicago Lying-in Hospital; Chairman, Department of Gynecology, Cook County Hospital; Professor of Gynecology, Cook County Graduate School of Medicine. Ninth edition. W. B. Saunders Co., Philadelphia, 1947. Price, \$10.
- OBSTETRICAL PRACTICE**—By Alfred C. Beck, M.D., Professor of Obstetrics and Gynecology, Long Island College of Medicine; Obstetrician and Gynecologist-in-Chief, Long Island College Hospital, Brooklyn. Fourth edition. The Williams & Wilkins Company, Baltimore, 1947. Price, \$7.
- RADIOLOGY FOR MEDICAL STUDENTS**—By Fred Jenner Hodges, M.D., Professor and Chairman, Department of Roentgenology University of Michigan; ISADORE LAMPE, M.D., Associate Professor, Department of Roentgenology, University of Michigan; JOHN FLOYD HOLT, M.D., Assistant Professor, Department of Roentgenology, University of Michigan. The Year Book Publishers, Inc., Chicago, 1947. Price, \$6.75.
- REHABILITATION THROUGH BETTER NUTRITION**—University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Alabama; by TOM D. SPIES, M.D., from the Department of Internal Medicine, University of Cincinnati College of Medicine. W. B. Saunders Company, Philadelphia, 1947. Price, \$4.
- Rh-ITS RELATION TO CONGENITAL HEMOLYTIC DISEASE AND TO INTRAGROUP TRANSFUSION REACTIONS**—By Edith L. Potter, M.D., Ph.D., Assistant Professor of Pathology, Department of Obstetrics and Gynecology, The University of Chicago and the Chicago Lying-in Hospital. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.50.
- A TEXTBOOK OF PATHOLOGY**—By E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis, Minn.; Contributors—B. J. Clawson, M.D., Professor of Pathology in the University of Minnesota, and J. S. McCartney, M.D., Associate Professor of Pathology in the University of Minnesota. Sixth edition. Lea & Febiger, Philadelphia, 1947. Price, \$10.
- UROLOGY IN GENERAL PRACTICE**—By Nelse F. Ockerblad, B.S., M.D., F.A.C.S., Professor of Clinical Urology, University of Kansas School of Medicine; Senior Attending Urologist to St. Luke's Hospital; Consulting Urologist to the Children's Mercy Hospital, Kansas City, Mo.; Diplomate of the American Board of Urology. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.75.
- 1946 YEARBOOK OF OBSTETRICS AND GYNECOLOGY**—Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., Professor of Gynecology, Cook County Graduate School of Medicine; Chairman, Department of Gynecology, Cook County Hospital; Attending Obstetrician and Gynecologist, Michael Reese Hospital; Associate Staff, Chicago Lying-in Hospital; author of "Office Gynecology" and "Obstetrics in General Practice"; co-author of the DeLee-Greenhill "Principles and Practice of Obstetrics." The Year Book Publishers, Chicago, 1947. Price, \$3.75.
- 1946 YEAR BOOK OF PEDIATRICS**—Edited by Isaac A. Abt, D.Sc., M.D., Emeritus Professor of Pediatrics, Northwestern University Medical School; Consulting Physician, Children's Memorial Hospital, St. Luke's Hospital and Michael Reese Hospital, Chicago; with the collaboration of ARTHUR F. ABT, M.D., Associate Professor of Pediatrics, Northwestern University Medical School; Attending Pediatrician, Michael Reese Hospital; Attending Pediatrician, La Rabida Jackson Park Sanatorium; Consultant in Pediatrics, Chicago Board of Health, and Consultant in Pediatrics, Great Lakes Naval Hospital, Great Lakes, Illinois. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.
- 1946 YEAR BOOK OF PHYSICAL MEDICINE**—Edited by Richard Kovacs, M.D., Professor of Physical Medicine, New York Polyclinic Medical School and Hospital; Attending Physical Therapist, Manhattan State, Harlem Valley State, Columbus and West Side Hospitals; Visiting Physical Therapist, New York City Department of Correction Hospitals; Consulting Physical Therapist, New York Infirmary for Women and Children, Mary Immaculate Hospital, Jamaica, N. Y., St. Charles Hospital, Port Jefferson, L. I., Hackensack Hospital, Hackensack, N. J., and Alexian Brothers Hospital, Elizabeth, N. J., Senior Consultant in Physical Medicine and Medical Rehabilitation, Veterans' Administration. The Year Book Publishers, Chicago, 1947. Price, \$3.75.

BOOK REVIEWS

PRACTICAL PHYSIOLOGICAL CHEMISTRY

By Philip B. Hawk, Ph. D., President, Food Research Laboratories, Inc., Long Island City, New York; BERNARD L. OSER, Ph.D., Director, Food Research Laboratories, Inc., Long Island City, New York; and WILLIAM H. SUMMERSON, Ph.D., Associate Professor of Biochemistry, Cornell University Medical College, New York City. Twelfth edition. The Blakiston Company, Philadelphia, 1947. Price, \$10.

This twelfth edition has been almost completely rewritten and contains all of the newer concepts of physiological chemistry. The first forty-six pages are devoted to the physiochemical properties of solutions. Carbohydrates, fats, proteins, and nucleoproteins are discussed in separate chapters with emphasis placed on classification and chemical properties.

Tissues as chemical structures are treated under headings such as nervous tissue, connective tissue, and muscular tissue. Enzymes and their importance in oxidation and reduction are stressed. Digestion is taken up in orderly fashion, going from salivary digestion to putrefaction and detoxification. One chapter is given over to gastric analysis. Photolemetric and spectrophotometric methods of blood analysis are stressed, but the standard technics of visual colorimetric estimations are also given. Acid base balance, energy metabolism and hormones are covered in consecutive chapters. The discussion of urine is divided into sections on normal urine and urine in pathologic states. One chapter is devoted to the metabolism of carbohydrates, fats, and proteins and one to the metabolism of inorganic substances. Technics of quantitative estimation of vitamins are included in the discussion of vitamins. The last chap-

ter comprises the later information on antibiotics as well as a description of the analogues of amino acids, vitamins and hormones.

An appendix of fifty-eight pages is present at the end of the book which gives technical data on chemical solutions, the composition of foods and the care of laboratory animals.

The laboratory exercises included at the end of each chapter indicate that the book is designed for use as a textbook. The subject matter is detailed enough for use as a reference book on physiologic chemistry for the clinical chemist and the physician. Those who wish to understand the rationale behind the chemical determinations performed in the clinical laboratory as well as the actual technic for the determinations will consider this book a valuable addition to their library.

F. C. C.

ALLERGY IN THEORY AND PRACTICE

By Robert A. Cooke, M.D., Sc.D., F.A.C.P.; in association with Horace S. Baldwin, M.D., Robert Chobot, M.D., Russell C. Grove, M.D., Joseph Harkavy, M.D., Selian Hebbald, M.D., Michael Heidelberger, Ph.D., Paul Klemperer, M.D., Louis Schwartz, M.D., W. C. Spain, M.D., Dudley D. Stetson, M.D., Margaret B. Strauss, M.S., Albert Vander Veer, M.D., and Matthew Walzer, M.D. W. B. Saunders Company, Philadelphia and London, 1947. Price, \$8.00.

A new and very useful book on allergy, Dr. Cooke deserves a lot of credit for bringing together with a uniformity of style the work of a number of contributors. The book is decidedly not padded and combines brevity with comprehensiveness.

In addition to asthma, hay fever and the allergic dermatoses, special chapters are devoted to allergy of the nervous system in which are discussed Ménéier's disease and migraine, allergy of the cardiovascular system which includes reactions to tobacco and other agents, and allergy in relation to diseases of the eye. A special chapter is devoted to allergy in infancy and childhood. Last is a very practical discussion of technics and laboratory procedures.

This book is recommended because it is brief, practical and complete in its scope.

R. J. S.

1946 YEARBOOK OF GENERAL MEDICINE

Edited by George F. Dick, M.D.; J. Burns Amberson, M.D.; George R. Minot, M.D., S.D., F.R.C.P.; William B. Castle, M.D., S.M., M.D., (Hon.) Utrecht; William D. Stroud, M.D.; George R. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1946. Price, \$3.75.

This book was written in the style made popular by the Year Book publishers of covering the field of general medicine by having men recognized in their fields of special interest survey the literature of the past year.

The summaries of articles incorporated and the pertinent comments the authors make is a great help in trying to keep up with the worthwhile work being published. By using the bibliography any subject particularly interesting can be studied more completely.

The book is not a reference on any subject, but as it was intended to be, a survey of the literature covering General Medicine.

J. H.

THE 1945 YEAR BOOK OF GENERAL THERAPEUTICS

Edited by Oscar W. Bethea, M.D., Professor of Clinical Medicine, Tulane University, School of Medicine (retired); Senior in Medicine, Southern Baptist Hospital; Consulting Physician, Charity Hospital; Member of the Revision Committee of the U. S. Pharmacopeia 1930-1940. The Year Book Publishers, Chicago, 1946. Price, \$3.

After reading the 1945 Year Book of General Therapeutics edited by Dr. Bethea, I have found that it has been an excellent review of many phases of therapeutics of which the medical officer in the United States Army may not have been able to keep abreast.

Much has been said in this book relative to the more recent understandings, indications and means of giving the various sulfa drugs as well as present-day evaluation of penicillin therapy. There is an excellent survey within the book of the present-day methods of treating malaria which has undergone remarkable changes in the last five years.

I very highly recommend the Year Book of General Therapeutics for every general practitioner who does not have sufficient time to read all the periodicals which are summarized so effectively in this book.

F. M. B.

QUARTERLY REVIEW OF OBSTETRICS AND GYNECOLOGY, VOLUMES I, II, AND III

Bound volumes of publication for years 1943, 1944, and 1945. Washington Institute of Medicine, Washington, D. C. Price, \$25 per set.

These volumes contain a comprehensive review of the entire literature of obstetrics and gynecology for the years 1943, 1944, and 1945. They are bound in separate volumes for each year. Each volume contains four quarterly reviews which are divided into standardized subject headings. This makes possible a rapid review of the literature on any particular subject. There is also a yearly index of all the material covered by the articles reviewed.

The abstracts of the articles contain the important points and are complete enough to provide a good understanding of the authors' intent. The articles are selected by an editorial board of well known obstetricians and gynecologists who are authorities in their respective fields.

P. K. H.

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk County

The regular meeting of the Black Hawk County Medical Society was held at the Russell-Lamson Hotel, Waterloo, May 6 at 6 p.m. Dr. Harold C. Lueth, Dean of the University of Nebraska College of Medicine and Professor of Medicine at the University of Nebraska, spoke on "The Treatment of Rheumatic Heart Disease in Young Adults." Dr. J. R. Schenken, Professor of Pathology at the University of Nebraska, spoke on "The Rh Factor."

Clinton County

Dr. J. K. Stewart of Clinton gave a lecture on pathology at a meeting of the Clinton County Medical Society which met April 12 at Mercy Hospital, Clinton. It was voted to hold meetings regularly on the second Saturday of each month.

Decatur County

Decatur County Medical Society held a meeting at the County Hospital April 15. The scientific program was presented by Dr. C. N. Hyatt of Humeston who spoke on "Urologic Diagnosis."

Des Moines County

Dr. E. L. Derlacki, of the department of ear, nose and throat at Northwestern University, addressed a regular meeting of the Des Moines County Medical Society April 8 in Hotel Burlington, Burlington. He told of the development in his department of an operation technic for certain types of deafness.

Greene County

Members of the Greene County Medical Society and their wives met at Hotel Lincoln, Jefferson, at 6:30 p.m. April 25 for dinner. Two films, "Pediatric Anomalies" and "Care of the Premature Infant," were shown.

Iowa and Illinois Central District

The annual meeting of the Iowa and Illinois Central District Medical Association was held May 22 at the Watchtower Inn, Blackhawk State Park, Rock Island, Ill. Speakers and their subjects were: Donald J. Wilson, M.D., of Omaha, "Dermatology and the General Practitioner"; M. Pinson Neal, M.D., Columbia, Mo., "The Diagnosis of Pernicious Anemia"; and Karl A. Meyer, M.D., Chicago, Ill., "Recent Advances in the Treatment of Cancer of the Large Bowel."

Jasper County

Newly elected officers of the Jasper County Medical Society are: Dr. Thomas D. Wright, president; Dr. James C. Hill, vice president; Dr. R. F. Frech, secretary-treasurer; Dr. James C. Hill, delegate; Dr. John W. Billingsley, alternate; Drs. E. A. McMurray, L. E. Fellows, and R. F. Frech, censors. All are from Newton.

Johnson County

Members of the Johnson County Medical Society met at Hotel Jefferson, Iowa City, May 7 for a 6 o'clock dinner. Dr. W. C. Huffman, Assistant Professor in the Department of Otolaryngology and Oral Surgery at the State University, spoke on "Nasal Reconstruction." The discussion was opened by Dr. D. M. Lierle, Professor and Head of the aforementioned department.

Pocahontas County

The Pocahontas County Medical Society met April 28 at the home of Dr. J. B. Thielen in Fonda. The meeting was devoted to the discussion of purchasing equipment for the new hospital at Laurens.

Scott County

Dr. Robert Towle of Davenport addressed the members of the Scott County Medical Society at their monthly dinner meeting at the Lend-a-Hand Club May 6. The subject of his paper was "The Endoscopic Examination of the Stomach."

Washington County

The Washington County Medical Society held its monthly meeting April 24 in the Nurses' Home. Following dinner, Dr. W. D. Paul of the State University of Iowa College of Medicine spoke on poliomyelitis.

Woodbury County

Dr. Franklin B. Peck, Director of Diabetic Research at Eli Lilly laboratories, Indianapolis, Ind., and Associate Professor of Medicine at the University of Indiana Medical School, spoke at the meeting of the Woodbury County Medical Society May 15. His subject was "The Management of Diabetes Including Diabetic Complications during Pregnancy."

Wright County

The Wright County Medical Society held its monthly dinner meeting at the New Home Cafe at 6:30 p.m. April 10. Immediately following the dinner a business meeting was held at the American Legion Hall, an explanation of the county cancer drive being given.

PERSONALS

Dr. D. C. Alftine of Muscatine has been named chairman of the health committee of the Muscatine Chamber of Commerce for the current year, according to announcement made by V. D. Nietzel, chamber president.

Dr. Walter L. Bierring was named a life member of the Canadian Public Health Association at a meeting of that organization in Quebec May 21. This honor was conferred in behalf of Dr. Bierring's efforts in the public health field. At the centennial commencement of the State University of Iowa on June 7, Dr. Bierring will be presented with a certificate of accomplishment among a group of distinguished alumni of the University. Dr. Bierring was a member of the class of 1892.

Dr. Gail D. Boyd, who has been practicing medicine in Manilla, has opened temporary offices for the practice of medicine in Irwin. The Irwin Commercial Club has begun plans for a new office building for the doctor.

Dr. M. Brownstone, formerly of Sandstone, Minn., has joined his brother, Dr. Sidney Brownstone of Clear Lake in medical practice.

Dr. Vincent H. Carstensen has announced the opening of his office for the general practice of medicine and surgery in Waverly.

Mr. L. E. Chancellor, Director of the Division of Vital Statistics, State Department of Health, and President of the American Association for Registrars, will preside at the meeting of the latter group to be held in Washington, D. C., May 1 and 2.

Dr. Lyle Frink, who has been taking a refresher course at Broadlawns General Hospital, Des Moines, has announced plans to open an office in the Moore Building, Spencer.

Dr. William M. Hale, Dr. J. R. Porter, and Dr. A. T. McKee of Iowa City attended a meeting of the Society of American Bacteriologists in Philadelphia May 12-17. Dr. Porter presented a paper at a seminar on bacterial metabolism and presided at sessions in bacterial physiology.

Dr. W. W. Hayne, formerly of Paullina, recently moved to Des Moines where he became associated with Dr. E. D. McClean, a general surgeon. Dr. Hayne located in Paullina in 1940 and served in the armed forces three years.

Dr. Robert L. Jackson of the Department of Pediatrics, University Hospitals, spoke on "Health Problems of Children" at the sixth annual meeting of the Delaware County Nursing Service in Manchester April 11.

Dr. Carl A. Jacobs has opened offices in the Frances Building, Sioux City, with his practice limited to surgery. Dr. Jacobs was graduated from the State University of Iowa College of Medicine in 1936, served his internship at St. Mark's Hospital, Salt Lake City, Utah, and became a resident in surgery at University Hospitals in 1937. Dr. Jacobs also served almost five years in the armed forces.

Dr. P. C. Jeans, Dr. J. D. Boyd, and Dr. R. J. Jackson of Iowa City attended a meeting of the American Pediatrics Society in Stockbridge, Mass., recently. Dr. Jeans met with the Food and Nutritional Board of the National Research Council in Washington, D. C., before going to Stockbridge.

Dr. Leo H. LaDage of Davenport has reopened his office after taking six months of special work in plastic and maxillo-facial surgery at the Plastic and Jaw Unit, Park Prewett Hospital, Basingstoke, England.

Dr. William Kerr of Randolph retired from active practice May 3 following forty-five years of service to that community. He plans to maintain his home in Randolph but do extensive vacationing during the coming months.

Dr. Ray E. King has been elected assistant medical director of the Bankers Life Company of Des Moines, it was recently announced. Dr. King completed an internship at University Hospitals, Omaha, Neb., after having received his medical degree from the University of Nebraska College of Medicine. Dr. King is a native of Sac City.

Dr. Norman Knosp became associated with Dr. Don H. Newland in the practice of medicine in Belle Plaine May 1. In May Dr. Knosp was discharged from the Army Medical Corps following three years' service. He is a graduate of the University of Nebraska.

Dr. Robert M. Knox of Des Moines became associated with Dr. A. M. Hess of West Union in the practice of medicine May 1.

Dr. Robert J. Kurth of Waterloo has opened offices for the practice of medicine in Dike. A graduate of Creighton University Medical School, Dr. Kurth served his internship at St. Luke's Hospital, Chicago. He is an army reserve officer.

Dr. D. O. Maland, who has been associated with Dr. W. A. Bockoven of Cresco since his discharge from the army in October, opened an office in that city May 8.

Dr. C. Maris and Dr. Lloyd J. Sweeney of Sanborn have announced the formation of a partnership. Dr. Sweeney came to Sanborn in September, 1946, to assist Dr. Maris in his practice.

Dr. John E. Norment, medical supervisor at the E. I. duPont de Nemours, Inc., plant in Clinton, spoke at the annual meeting of the Iowa Public Health Association in Des Moines May 2.

Dr. C. W. Seibert of Waterloo addressed the members of the Fourth District Nurses' Association at a luncheon meeting in Black's Tea Room, Waterloo, May 10. His subject was "The Clinical Significance of the Rh Factor in Obstetrics."

Dr. Phillip Spencer of Clarion has announced his intention to open offices for the practice of medicine in Baxter. Dr. Spencer, who is now on terminal leave from the army, has purchased a residence and will move there in the near future.

Dr. J. H. Stalford of Sac City spoke to the Kiwanis Club of that city on April 7. His subject was "Longevity."

Dr. G. A. Sywassink of Muscatine spoke on his medical work in China at a meeting of the Sixth District of the Iowa State Nurses' Association held at the Y.W.C.A., Muscatine, April 10.

Dr. Ralph Weaver of Marquette, Neb., has opened offices for the practice of medicine in Cumberland. He succeeds Dr. A. Weaver who passed away in 1944.

MARRIAGE ANNOUNCEMENTS

Roddewig-Gray

Announcement has been made of the engagement and approaching marriage of Miss Janet Marie Roddewig, daughter of Mr. and Mrs. Ed Roddewig of Buffalo, and Dr. Charles E. Gray, son of Mrs. Carrie Gray of Iowa City. The marriage will take place June 25 in the Presbyterian Church, Iowa City. Miss Roddewig is a graduate of the State University of Iowa and is now employed on the nursing staff of University Hospitals. Dr. Gray is a graduate of the College of Medicine, State University of Iowa, and is a resident in the Department of Anesthesia, University Hospitals.

Wareham-Cline

Miss Mary Alice Wareham, daughter of Mr. and Mrs. L. Delbert Wareham of Iowa City, became the bride of Dr. Hubert L. Cline, son of Mr. and Mrs. Roy Cline of Wilsonville, Neb., April 22. The ceremony was performed in St. Thomas More Chapel, Iowa City. Mrs. Cline attended the State University of Iowa three years and Dr. Cline was graduated from the College of Medicine there. They will make their home in Detroit where Dr. Cline will intern at Harper Hospital.

DEATH NOTICES

Beveridge, Thomas F., aged 80, died April 22 in a hospital in Muscatine, his home, following a brief illness. Dr. Beveridge, a graduate of the Kentucky School of Medicine, Louisville, with the class of 1891, had practiced in Muscatine fifty-five years. He was a life member of the Muscatine County and Iowa State Medical Societies.

Burbank, Frank E., aged 90, died April 19 in Community Hospital, Pleasantville. A graduate of the State University of Iowa College of Medicine, he was a life member of the Marion County and Iowa State Medical Societies. Dr. Burbank practiced in Oxford, Iowa, from 1892 until his retirement in 1939.

Groman, August, of Odebolt, aged 90, died at his home April 22. Dr. Groman, who had served that community fifty-four years, had retired in 1932. He was a graduate of the Chicago Homeopathic Medical College with the class of 1878 and was a life member of the Sac County and Iowa State Medical Societies.

Parker, James Donaldson, aged 79, of Fayette died April 18 of coronary thrombosis at his home. Dr. Parker was graduated from the University of Michigan Medical School, Ann Arbor, in 1892 and had practiced in Fayette since that time. He was a member of the Fayette County and Iowa State Medical Societies and of the Fifty Year Club.

Tamisiea, John Lewis, aged 81, died May 10 at his home in Missouri Valley where he had practiced medicine 55 years. A graduate of the State University of Iowa College of Medicine, Iowa City, in 1896, Dr. Tamisiea was a member of the Harrison County and Iowa State Medical Societies.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p.m.

WSUI—Thursdays at 2:45 p.m.

June 4-5 Crippled Children

Mrs. Dorothy Phillips

June 11-12 Summer Skin Troubles

Kurt Jaenicke, M.D.

June 18-19 Summer Complaints in Children

Maryelda Rockwell, M.D.

June 25-26 Water Hazards

Donald F. Rodawig, M.D.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Board of Trustees

April 16, 1947

The Board of Trustees of the Iowa State Medical Society met Wednesday morning, April 16, 1947, with the following persons present: Trustees John I.

Marker, W. A. Sternberg and L. R. Woodward; President Robert L. Parker, President-elect H. A. Spilman, and F. A. Ely of the Medicolegal committee.

Minutes were read and approved and bills were authorized. The following business was also transacted: the Medicolegal committee was authorized to employ Mr. Fred Huebner as legal counsel for a year; expenses of the three delegates, the secretary and executive secretary to the American Medical Association meeting were authorized; office policies were discussed; and a meeting for county representatives, to be presented by the Committee on Medical Service and Public Relations, was discussed. Meeting adjourned about noon.

Meeting of the Publication Committee

The Publication Committee met at Hotel Fort Des Moines Wednesday morning, April 16, with the following persons present: Doctors J. I. Marker, L. R. Woodward and W. A. Sternberg, trustees; President Robert L. Parker, President-elect H. A. Spilman, and editor E. M. George.

Advertising policies were discussed; it was decided not to place an advertisement on the front cover of the JOURNAL; and the board voted to permit one series of advertisements to be completed but that in the future only Council accepted products might be advertised. The roster of physicians in the July JOURNAL, it was voted, should carry a cross marking those who are participating in Iowa Medical Service. Meeting adjourned at 10:45 a.m.

Meeting of the Council

The Council of the Iowa State Medical Society met on Friday morning, April 18, with the following persons present: Doctors L. L. Carr, J. B. Knipe, R. N. Larimer, E. F. Beeh, J. C. Hill, H. A. Housholder, C. A. Boice and R. C. Gutch. Dr. Boice was elected chairman and Dr. Larimer secretary for the coming year.

Slowness of the progress of the veterans' program was discussed and regretted, and plans for the coming year were considered. Meeting adjourned about 10:00 a.m.

Meetings of the Committee on Medical Service and Public Relations April 16, 1947

The first meeting of the Committee on Medical Service and Public Relations was held at 5:00 p.m. Wednesday, April 16, with the following persons present: Doctors Fred Sternagel, R. D. Bernard, C. T. Maxwell, M. I. Olsen, E. E. Shaw, C. A. Nicoll, H. E. Farnsworth, D. C. Conzett, Robert L. Parker, and Mr. Wilbur Quinn of Iowa Medical Service.

Minutes of the previous meeting were read and approved; the Association of American Physicians and Surgeons was discussed; the program of the Planned Parenthood League as approved by the House of Delegates in 1944 was considered still worthy of approval; expansion of Iowa Medical Service was urged; plans for holding a state meeting to explain the work of the committee to representatives from all counties were presented; and more

secretarial help was felt necessary for carrying on the work of the committee. Meeting adjourned about 6:30 p.m.

April 18, 1947

The second meeting of the committee was held Friday morning, April 18, at 11:00 a.m. Those present included Doctors Sternagel, Olsen, Gutch, Shaw, Maxwell, Conzett, Bernard, F. A. Hennessy, and Channing Smith. The wisdom of holding a state meeting as compared to district meetings was discussed but no final decision made; division of efforts of the members was left until another meeting; the old age assistance program was reviewed and it was voted to send a resolution to our congressional delegation asking for a change in the law covering the program. Meeting adjourned about 12:30 p.m.

ORGANIZATION MEETING FOR NEW GENERAL PRACTITIONERS' SOCIETY

An organization meeting for a new National Society for General Practitioners will be held at the Claridge Hotel in Atlantic City, N. J., on Tuesday, June 10, at 8:00 p.m.

This meeting is the outgrowth of a gathering of general practitioners held during the A.M.A. meeting in San Francisco last year. Various groups have been working on the plans for this organization, and a constitution and by-laws has been prepared for adoption at the June meeting. Other questions regarding the status of the general practitioner will also be presented.

All general practitioners attending the A.M.A. annual meeting in June are urged to register in the section of general practice at the A.M.A. registration booth.

RESOLUTIONS

(Continued from page 255)

pressed to Mrs. Jesse D. Hamer, President of our National Auxiliary for the beneficence of her presence, her inspirational address and general helpfulness; to Dr. Robert L. Parker, president of the Iowa State Medical Society and to Dr. Harold A. Spilman, president-elect of the Iowa State Medical Society, for their greetings and service as advisory councilors to the Auxiliary; to Mr. Clyde Carter for his address; to the Board of Trustees for their financial support; to Miss Mary McCord of the office staff of the Iowa State Medical Society; to Cownie's for the courtesy of their style show; to the press for its courtesy and consideration; to the Savery Hotel for its generous accommodations; to our President, Mrs. M. H. Brinker, who has served so capably and loyally during the past year; to Mrs. Fred Moore, president-elect; Mrs. C. A. Nicoll, secretary; to Mrs. George H. Watters and Mrs. H. I. McPherrin for their participation in the program; and to all those unidentified persons whose thoughtfulness has made our convention a success.

MRS. S. S. WESTLY, *Chairman*
MRS. J. C. DECKER
MRS. K. M. CHAPLER

The JOURNAL of the Iowa State Medical Society

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No. 7

RESECTION OF THE RIGHT PORTION OF THE COLON WITH END-TO-END ILEOTRANSVERSE COLOSTOMY FOR MALIGNANCY*

Charles W. Mayo, M.D., Rochester, Minn.

There is anatomic ambiguity in the term "right portion of the colon." Some authorities have considered the abdominal portion of the colon as being composed of two main parts, the right and the left, assuming the line of demarcation to be in the middle of the transverse colon. In an analysis of statistics, it is important to know what a speaker or writer means when he concerns himself with such a subject. In this as in past considerations of the right portion of the colon, I include the cecum, ascending colon and hepatic flexure only.

The purposes of this presentation are to record some pertinent facts and figures relative to malignant lesions of the right part of the colon which have been ascertained in a recent review of cases, and also specifically to discuss a method of resection and end-to-end ileotransverse colostomy in one stage which has proved very satisfactory.

Diagnosis

Regarding symptoms, it is still unusual in the presence of early lesions to find any definite indications that point with suspicion at the right part of the colon. When an early diagnosis is made, generally it is an accidental finding. A majority of patients (67 per cent) will have had symptoms for a period of six months to more than a year before a correct diagnosis is made.

As malignant lesions in this portion of the colon progress, many of them ulcerate and some have a large surface area which accounts for the oozing of blood and the production of secondary anemia so often encountered and too frequently treated as a primary anemia.

Acute or subacute appendicitis is another diagnosis that sometimes is made in these cases. One

review of cases revealed that 15 per cent of the patients had undergone appendectomy within the period of symptoms from the malignant lesion. This and the fact that only 2 per cent of carcinomas of the right portion of the colon occur in patients less than 30 years of age would justify the dictum that in patients more than 30 years old an incision for appendectomy should be adequate to allow exploration of the right part of the colon.

One might summarize the problem of diagnosis by stating that if digestive disturbances or a change in intestinal habit has persisted in a patient more than 30 years of age and the stomach, duodenum and gallbladder have been ruled out as causes for the disturbance, then investigation of the right part of the colon is mandatory.

A marked degree of obstruction is rare in these cases because of the fluid nature of the intestinal contents on the right side and because constricting, or napkin-ring, lesions are unusual in this portion of the colon. However, a palpable mass can be found in about 75 per cent of the cases.

Roentgenologic examination is essential to pre-operative diagnosis. It should be done by one who understands roentgenoscopy and the method of double contrast roentgenograms, which are made by inflating the colon with air after the barium has been expelled. Once the diagnosis of a malignant lesion is established, the case is classified as an emergency and no time should be lost in preparing the patient for surgical intervention unless operation is otherwise contraindicated. Time is of prime importance in all malignant processes.

Preoperative Preparation

Approximately four days are required for the preparation of most patients for operations on the colon. Anemia may have to be corrected. The blood grouping and the Rh factor should be determined because transfusion should be given in all cases during or immediately after operation when resection is performed.

One of the sulfonamide drugs usually is em-

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ployed in the preparation of the colon for operation. In my opinion, sulfathalidine is the drug of choice at present for preparation of patients for resection of the right portion of the colon. One and a half grams of sulfathalidine is given every four hours until 36 gm. has been taken by mouth. Paregoric should be given in doses of 8 cc. at 2, 6 and 10 o'clock of the afternoon and evening before operation in order to put the bowel at rest.

Operation

It is a trite saying, but still true, that the anesthetic of choice is the one with which the anesthetist is most familiar.

There are many methods of resecting the right portion of the colon and there are many more differences of detail in performing any one of those methods. Every surgeon has pet likes and dislikes for certain types of technic, for certain sutures and certain surgical instruments. In this discussion I shall confine myself to surgical trends and limit the consideration of surgical procedure to one: namely, primary resection and end-to-end ileotransverse colostomy.

In 1939, Lovelace and I¹ reviewed all the cases in which resection of malignant lesions of the right portion of the colon was performed at the Mayo Clinic from 1907 to 1938, inclusive, a series of 885 cases. With the aid of the Division of Biometry and Medical Statistics, I have just completed another review of these cases in which resection was performed at the clinic from 1940 through 1946. In this study, the following changes have evidenced themselves:

1. The resectability rate has risen from 67 to 77 per cent.
2. Primary resection and ileotransverse colostomy in one stage has superseded two-stage and multiple-stage operations. In the past six years, 73 per cent were one-stage procedures.
3. Of the one-stage operations, in 38 per cent primary resection and end-to-end ileotransverse colostomy was performed.
4. During the year 1946, resection of the right portion of the colon was performed for malignant lesions in 90 cases with no hospital deaths. In only 3 of these 90 cases was the operation performed in two stages and no extraperitoneal resection was performed.
5. Although a comparison of mortality rates between the period from 1907 to 1938 and the period from 1940 to 1946 is not a fair one, it is mentioned merely to emphasize the progress that has been made. In the former period the mortality rate for one-stage procedures was 22 per cent and for two-stage procedures was 29 per cent. In

the latter period one-stage procedures were performed with a mortality rate of 3 per cent and two-stage procedures with a mortality rate of 6 per cent.

Primary Resection and End-to-End Ileotransverse Colostomy for Malignant Lesions of the Right Portion of the Colon

Up to date, on my surgical service, one-stage resection, and end-to-end ileotransverse colostomy has been performed 54 times with 1 surgical death. It is my present operation of choice for malignant lesions of the right part of the colon. The following technical method is employed:

The incision is a longitudinal one at the outer border of the right rectus muscle through the rectus sheath; the rectus muscle is retracted medially and the posterior fascia and the peritoneum are incised.

After exploration for metastasis or other complicating factors has been completed, the right portion of the colon, beginning with the cecum, is mobilized. A wide segment of the mesentery of the colon is resected and the vessels are ligated deep.

The points for transection of the transverse colon and the ileum are selected with special consideration of the blood supply and the distance from the growth. The ileum is transected at an angle to insure a good blood supply to the cut edge and an adequate lumen to fit the colon. I have not yet encountered a case in which the ileum cut in this manner could not be made to fit the transected transverse colon. The colon and the ileum are cut with the cold scalpel; the cautery is not used because it is felt that such heat devitalizes the tissue.

Crushing clamps are not used at the site for the anastomosis. An open type of anastomosis is performed, rubber-covered clamps being employed to minimize soiling. It is felt that whatever questionable loss may be caused by some soiling is more than compensated for by the accuracy of placing sutures when the open method of anastomosis is employed.

An outer row of running cotton suture is employed half way around the serosa. The mucosa is closed with a running catgut suture. The remaining half of the serosal coat is closed with interrupted cotton sutures. Only two rows of suture material are used because it is felt that more would interfere unnecessarily with healing.

The mesentery of the ileum and the mesentery of the transverse colon are brought together and closed in order to keep the small bowel from slipping through this opening. The raw surface on the right from which the colon has been removed

is peritonealized after retroperitoneal drainage has been established by placing two Penrose drains in position and bringing them out through a small incision in the right flank. The region of the anastomosis is then thoroughly swabbed with an antiseptic (phemerol), and before the incision is closed 5 gm. of sulfonamide powder is sprinkled on the area intraperitoneally.

After the abdominal incision has been closed and before the patient has recovered consciousness, the anus is manually dilated sufficiently to paralyze the sphincters temporarily so that gas cannot be retained. This latter procedure, I feel, is a very important part of the operation.

Except in one or two instances, it has not been necessary to employ a Miller-Abbott tube preoperatively and not at all postoperatively in the cases on my service.

Patients are allowed to ambulate early and the majority of them are dismissed from the hospital in less than two weeks.

Prognosis

The ultimate prognosis of malignant lesions of the right portion of the colon is an interesting problem in itself. A good result over the years after operation of a nature that will insure a happy and productive existence to the patient is our objective.

As might be suspected, the prognosis is influenced by the grade of the lesion, by the mural penetration of the malignant cells and by metastasis to adjacent and distant points, as well as by the age of the individual patient. If one divides the cases in which resection has been performed into two groups, those without nodal involvement and those with nodal involvement, regardless of other factors the following five year survival rates hold. Without nodal involvement, 64 per cent of patients live five years or longer; with nodal involvement, 47 per cent live five years or longer. A recent study of malignant lesions of the rectum for which one-stage combined abdomino-perineal resection was performed revealed that when nodal involvement was not present, 74 per cent of the patients lived five years or longer; when nodal involvement was present, 38 per cent of the patients lived five years or longer.

Conclusions

There are indications that the public is more cancer-conscious and seeking the help of the physician earlier than formerly but this is a supposition and lacks sufficient proof.

The physician is becoming more educated to suspect and investigate the colon in instances in which anemia, fatigability and weakness exist;

also, he is more aware of the fact that persistent digestive disturbances combined with a change of intestinal habit demand roentgenographic study of the colon.

The results of surgical treatment of malignant lesions of the right portion of the colon are fast arriving at a point where the responsibility for further improvement in end results is going to depend on earlier diagnosis so that treatment can be undertaken before the malignant process has reached a point that will limit the value of resection.

One-stage resection of the right portion of the colon can be performed with a lower mortality rate and lower morbidity rate than can multiple-stage procedures.

One-stage resection, with rare exceptions, can be performed in any case in which a multiple-stage procedure also is feasible.

One-stage resection of the right portion of the colon with end-to-end ileotransverse colostomy is an operation that has given very satisfying results.

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PENICILLIN IN SURGERY

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Penicillin has played a very dramatic role in surgery. Since it was discovered, named and studied as such by Fleming in 1929, at which time he suggested that it might be used as an antiseptic by local application to infected areas, it has been applied as a cure for almost every disease entity at one time or another. It has been rivaled only by the sulpha drugs in the important place that it has held in medicine and surgery, and in many ways it has probably surpassed the sulpha drugs in the scope of its usefulness.

In 1942, while penicillin was still a very scarce article, the Committee on Medical Research in the office of Scientific Research Development called a conference on antibiotic agents, and the efforts of a large group of American investigators was concentrated on compiling further information from various medical centers. In 1943, a comprehensive report from this committee on the clinical use of penicillin did much to crystallize the ideas on the value of penicillin and made available to the armed forces and to civilians alike much information for the intelligent use of this new substance.

During the war and postwar years a tremendous

amount of research and experimental work on clinical application of penicillin has continued. Penicillin, as we know it and use it, has passed the mystery stage, and much of the information known about it has been crystallized fairly well into practical channels of thought and application. Penicillin is not a panacea for all surgical ills. It is a powerful adjunct to good surgical treatment. It will be the purpose of this paper to briefly discuss what seems to be at present the basic, well accepted facts about the clinical application of penicillin.

Mode of Action of Penicillin

Penicillin is generally thought to be a bacteriostatic agent, although studies have shown that cultures of certain susceptible organisms may be completely sterilized after contact with concentrations of penicillin. It is the opinion of Herrell² that penicillin has the ability to block certain enzyme systems or the utilization of certain nutrients which are essential for the growth and multiplication of bacteria. Whatever the actual chemistry may be, it seems to be the simultaneous action of leukocytes and other defense mechanisms of the body, plus the bacteriostatic action of penicillin, which allows for the elimination of certain infectious processes. Even in the presence of extremely high concentrations of penicillin, it has been shown that suspensions of some bacteria continue to take up oxygen for a time.⁸ It is interesting that penicillin seems most effective on bacteria cultures under conditions which promote the growth of the bacteria and likewise seems less effective under conditions which discourage the growth of the cultures.² Fortunately, the antibacterial action of penicillin is not significantly impaired by the presence of serum, blood, pus or tissue autolysates.⁸ It is also interesting that penicillin is apparently not absorbed or destroyed in the process of bacterial inhibition. The penicillin titer remains the same after a penicillin broth is inoculated and incubated with streptococci.²

Facts About Penicillin Resistance

The following chart shows an accepted list of the organisms which are sensitive to the action of penicillin and a list of the organisms which are resistant to the action of penicillin.

In general, it can be said that gram positive organisms and gram negative cocci are sensitive to penicillin. The gram negative bacilli are generally not sensitive to penicillin. There are many resistant strains of staphylococci, and the streptococci group varies considerably. Strep pyogenes is seldom resistant. It is definitely known

TABLE II²
Antibacterial Action of Penicillin in Vitro and in Vivo

Susceptible organisms	Insusceptible organisms
Diplococcus pneumoniae	Eberthella typhosa
Streptococcus pyogenes	Salmonella paratyphi
Streptococcus salivarius	Salmonella enteritidis
Micro-aerophilic streptococci	Shigella dysenteriae
Staphylococcus aureus	Proteus vulgaris
Staphylococcus albus	Pseudomonas aeruginosa
(some strains)	(Bacillus pyocyaneus)
Neisseria gonorrhoeae	Pseudomonas fluorescens
Neisseria intracellularis	Serratia marcescens
Actinomyces bovis	(Bacillus prodigiosus)
Bacillus anthracis	Klebsiella pneumoniae
Bacillus subtilis	Hemophilus influenzae
Clostridium botulinum	Hemophilus pertussis
Clostridium tetani	Escherichia coli
Clostridium perfringens (welchii)	Staphylococcus albus
Clostridium septicum	(some strains)
Corynebacterium diphtheriae	Monilia albicans
Micrococci (some strains)	Monilia candida
Streptobacillus moniliformis	Monilia krusei
Erysipelothrix rhusiopathiae	Blastomyces
Borrelia novyi (spirochete of relapsing fever)	Mycobacterium tuberculosis
Treponema pallidum	Streptococcus faecalis
Leptospira icterohaemorrhagiae	Brucella melitensis
Spirillum minus	Plasmodium vivax
Psittacosis virus	Trypanosoma equiperdum
Ornithosis virus	Toxoplasma
	Virus of influenza
	Vibrio comma

that resistance of staphylococci can be built up under experimental conditions by prolonged exposure to small doses of penicillin.^{2,4} It is interesting and important to note, however, that as the acquired resistance to penicillin increases, the virulence of the organisms decreases and becomes more susceptible to the antibacterial action of human blood. Thus, as the organism becomes more resistant to penicillin, it becomes less of a danger to the patient.² The development of resistance to penicillin varies significantly with various strains of organisms. The therapeutic effectiveness of the sulpha drugs is not altered by the development of resistance to penicillin. E. coli and other gram positive resistant organisms produce an enzyme-like substance called penicillinase which, in small quantities, is capable of inactivating large amounts of penicillin. The presence of these organisms and the resulting penicillinase accounts for the failure of penicillin to act on certain theoretically sensitive organisms when the sensitive and insensitive organisms are present together. Of further interest is the fact that this inhibiting agent, penicillinase, is occasionally found in certain organisms which are sensitive to the action of penicillin. However, bacteria which are capable of producing penicillinase are not likely to be sensitive. The development of penicillin resistance by an organism is not associated with acquired ability of the organism to produce the enzyme, penicillinase. In other words, the production of penicillinase is not the determining factor in the sensitivity of the organisms. This is in contrast to the synthesis of para-aminobenzoic acid by certain organisms which develop resistance to the sulpha drugs. Thus, penicillinase does not hold the same relationship to penicillin

fastness as does para-aminobenzoic acid to sulpha drug fastness.

Methods of Administration and Dosage

Penicillin can be effectively administered by a number of methods. It can be given intramuscularly by intermittent injection or by continuous drip. It can also be given intravenously by the continuous drip method. It may be administered intramuscularly in suspensions of beeswax and oil for the purpose of slower, prolonged absorption after a single dose. Its administration by way of the bone marrow has been advocated and has been used. Penicillin may be given orally and has been administered as an inhalant in a nebulized state for certain lung infections. It may also be given either locally in the thoracic cavity, in the articular spaces or in the spinal canal as an adjunct to one of the other parenteral methods of administration. At the present time the most favored manner of administering penicillin is by the intermittent intramuscular method. The intravenous route is much less acceptable to the patient and technically is much more difficult to accomplish. The intramuscular method is practical because maximal concentrations appear in the blood within about thirty minutes and about 80 per cent of the administered drug is eliminated within two hours. Therefore, intermittent intramuscular injections every three hours seem to maintain an adequate blood concentration. Intrathoracic, intra-articular or intrathecal supplements are added when indicated because of the well-known poor diffusibility into these body cavities. The other mentioned methods of penicillin administration are probably logical in selected instances with the intravenous continuous drip method ordinarily being reserved for overwhelming infections where an extremely high continuous concentration of penicillin in the blood stream is desired.

It would seem that there is no exact acceptable dosage of penicillin which can be assigned to any given surgical condition. Meleney¹⁰ has aptly said that an adequate dose of penicillin is one which will control the infection and get the patient well. In vitro tests of whole blood obtained from normal individuals receiving penicillin have shown maximal antibacterial activities against hemolytic strep and staph with concentrations as low as .04 and .2 units per cubic centimeter respectively. Lower concentrations exhibit definite but not maximal activities. Concentrations greater than these figures do not demonstrate any appreciable increase in antibacterial action.¹¹ One hundred thousand units of penicillin per day will produce a blood level of .1 unit per cubic centimeter of blood. Two hundred thousand units

per day will produce a blood level of .2 units per cubic centimeter of blood. Almost identical levels can be maintained whether the penicillin is administered by the continuous intravenous drip method or by the intermittent intramuscular method. The three-hour interval is probably the maximal amount of time which should be allowed between injections because of the rapid excretion from the blood. One hundred thousand units of penicillin per day is probably the minimal twenty-four hour dosage which is acceptable. Meleney¹⁰ advocates beginning with 20,000 units every three hours and doubling the dose if a response is not noted within forty-eight hours.

Reactions to Penicillin

Reactions to penicillin are thought to be due to toxic impurities rather than to active penicillin fraction. Particular batches of penicillin have shown the following reactions:

1. Chills with or without fever after intravenous injection.
2. Eosinophilia 20 to 30 per cent.
3. Burning pain at the site of injection.
4. Headache.
5. Flushing of the face and faintness.
6. Unpleasant taste after injection.
7. Muscle cramps.

The following reactions have not been limited to particular batches of the drug:

1. Urticaria.
 - a. Without fever.
 - b. With fever to 101 F.
 - c. With fever to 103 F. and abdominal cramps.
2. Fever with the first five days of treatment.
3. Transient azotemia.
4. Thrombophlebitis at the site of intravenous injection.

The period of sensitivity is usually transient and subsequent treatment shows no signs of persistent sensitivity. The incidence of reactions has decreased with recent improvements in production of penicillin.

Facts About Penicillin in Established Surgical Infections

It is impossible to quote final and definite figures on the effect of penicillin on various established surgical infections. A recent summary of the effect of penicillin on established surgical infections by Dr. Meleney¹⁰ represents what might be taken as a fairly accurate basis upon which to found our expectations. The cases analyzed came through the Committee on Chemotherapy of the National Research Council working with several groups of highly qualified and accurate observers

including Dr. Frank Meleney and his associates of New York, Drs. Harold Harvey and Robert H. E. Elliott of New York, Drs. John Lockwood, Jonathan Rhoads and William White of Philadelphia, and Dr. William Altemeier of Cincinnati. Included also in this group of observers were Drs. John Hirshfeld, McClure and Lamb of Detroit, and Drs. Ochsner and Caldwell of New Orleans. The cases in question were classified according to their response to penicillin in the following manner:

1. Excellent, in cases responding abruptly or definitely within seventy-two hours.

2. Good, in cases clearly showing the benefit of the drug but over a longer period of time, perhaps a week or ten days.

3. Questionable, in cases which might have done just as well without the drug, as a result of some surgical procedure or some other associated treatment.

4. No effect, in cases in which the infection was not altered in any way but ran its usual course.

Under such a classification note the following tables:

TABLE I¹⁰

Overall Results of Penicillin Treatment in Surgical Infections

Total No. of cases	Results in percentage					
	Favorable			Unfavorable		
	Excel-lent	Good	Com-bined	Question-able	No effect	Com-bined
744	14.8	49.9	64.7	17.8	17.6	35.4

TABLE Ia¹⁰

Most Favorable Results of Penicillin Treatment According to the Diagnosis

Diagnosis	Total Cases	Results in percentage					
		Favorable			Unfavorable		
		Excel-lent	Good	Com-bined	Question-able	No Effect	Com-bined
Furuncle	26	53.9	38.4	92.3	7.7	0	7.7
Cellulitis	36	64.0	27.7	91.7	8.3	0	8.3
Mastoiditis	6	0	83.3	83.3	0	16.7	16.7
Carbuncle	28	39.3	42.9	82.2	14.3	3.6	17.9
Suppurative arthritis	22	18.2	63.5	81.8	4.5	13.6	18.1
Lung abscess	11	0	81.7	81.7	0	18.3	18.3
Superficial abscess	32	25.0	56.3	81.3	6.3	12.5	18.8
Brain abscess	5	0	80.0	80.0	0	20.0	20.0
Osteomyelitis	153	8.5	68.0	76.5	13.7	9.8	23.5

The analysis of these 744 surgical infections was carried out much more in detail than will be mentioned here. It included results according to the acuteness of the process, the duration of symptoms before initiating treatment and previous forms of treatment. Comparisons were made with respect to whether or not surgery had been performed before, during or after the administration of penicillin. Comparisons were noted of the effect of combined methods of administration

TABLE Ib¹⁰
Intermediate Result of Penicillin Treatment According to Diagnosis

Diagnosis	Total Cases	Results in percentage					
		Favorable			Unfavorable		
		Excel-lent	Good	Com-bined	Question-able	No Effect	Com-bined
Deep abscess	58	15.5	53.4	68.9	22.4	8.6	31.0
Thrombo-phlebitis	12	8.3	58.4	66.7	16.7	16.7	33.3
Sinusitis	6	0	66.7	66.7	0	33.3	33.3
Infected soft-part wound	37	13.5	51.3	64.8	21.6	13.5	35.1
Infected operative wound	70	5.7	55.6	61.3	21.4	17.2	38.6
Otitis media	7	28.6	28.6	57.2	14.3	28.6	42.9
Infected com'pd fracture	9	0	55.6	55.6	11.1	33.3	44.4
Ulcer of skin	22	0	50.0	50.0	18.2	31.6	50.0

TABLE Ic¹⁰

Least Favorable Results of Penicillin Treatment According to Diagnosis

Diagnosis	Total Cases	Results in percentage					
		Favorable			Unfavorable		
		Excel-lent	Good	Com-bined	Question-able	No Effect	Com-bined
Empyema	34	0	47.0	47.0	26.5	26.5	53.0
Infected burn	31	3.2	42.0	45.2	29.0	25.8	54.8
Gas gangrene	9	11.1	33.3	44.4	33.3	22.2	55.5
Actinomycosis	7	0	42.9	42.9	28.6	28.6	57.2
Gangrene of skin	10	10.0	30.0	40.0	50.0	10.0	60.0
Miscellaneous	66	13.6	25.8	39.4	16.7	43.9	60.6
pneumonia	18	11.1	27.8	38.9	38.9	22.2	61.1
Peritoneal abscess	11	9.1	27.3	36.4	45.5	18.2	63.7
Diffuse peritonitis	18	5.5	22.2	27.7	22.2	50.0	72.2

TABLE XIV¹⁰

Results of Penicillin Therapy According to the Bacteriology in the Septicemia Cases

	Total Cases	Excel-lent	Good	Question-able	No Effect
Hemolytic streptococcus	8	2	5	0	1
Staphylococcus aureus	45	11	20	2	12
Staphylococcus albus	6	1	2	0	3
Micrococcus varians	1	0	1	0	0
Nonhemolytic streptococcus	6	0	3	0	3
Anaerobic streptococcus	2	0	0	1	1
Pneumococcus III	1	0	1	0	0
Pneumococcus IV	1	0	0	1	0
E. coli	1	0	0	0	1
B. proteus	1	0	0	1	0
Streptobacillus moniliformis	1	1	0	0	0
Unidentified gram neg. bacillus	1	0	0	0	1
Staph. aureus and nonhem. strept.	5	1	1	0	3
Staph. albus and nonhem. strept.	1	1	0	0	0
E. coli and B. proteus	1	0	0	1	0
E. coli, B. proteus, A. subtilis and Staph. aureus	1	0	0	0	1
	82	17	33	6	26

with respect to the amount administered. The over-all summary showed the following results:

1. Penicillin is effective in controlling the infection, either alone or as an aid to surgery, in about two-thirds of the general run of established surgical infections.

2. Penicillin is most effective in cases of furuncle, cellulitis, mastoiditis, carbuncle, suppurative arthritis, lung abscess, superficial abscess, brain abscess and osteomyelitis. The highest percentage of favorable results was found in the

pure staphylococcal infections, the organisms against which Fleming first demonstrated the activity of penicillin.

3. Penicillin is moderately successful in cases of deep abscess, thrombophlebitis, sinusitis, infected soft part wounds, infected operative wounds, otitis media, infected compound fractures and ulcers of the skin.

4. Penicillin is not so successful in cases of empyema, infected burns, gas gangrene, actinomycosis, gangrene of the skin, miscellaneous surgical infections, postoperative pneumonia, peritoneal abscess and diffuse peritonitis.

5. Penicillin is more successful in the treatment of acute than of chronic infections, and if given early rather than late in the course of the disease.

6. Penicillin is often effective when a sulpha drug fails to control the infection.

7. Many cases of well localized surgical infections can be successfully treated with local injections of penicillin solution or local application of penicillin in an ointment form.

8. Penicillin is not as successful in mixed infections as in those caused by a pure culture of susceptible organisms.

9. Gas gangrene is often found in a mixed culture with other intestinal organisms so that it frequently fails to respond to penicillin.

10. In the septicemia cases, the results were better in those due to the hemolytic streptococcus than in those due to the staphylococcus, probably because in the latter type the infection more quickly produces deep metastatic abscesses and vegetations on the heart valves.

Causes of Penicillin Failure

As already noted, penicillin failures occur in variable degrees. Penicillin may be a help but is not a cure in itself. In considering poor results with penicillin, certain fundamental facts about surgical infections should be kept in mind—facts which distinguish them from medical infections.

Surgical infections are characterized by:

1. A local spontaneous or traumatic breakdown of tissue, a localized exudation of leukocytes into a body cavity such as a joint, the pleura or substance of solid tissues, or organs such as muscle or liver. This broken down tissue or exudate must either be evacuated or absorbed before health can be restored.

2. Thrombosis of the blood vessels in the wall of any abscess. Therefore, any medication coming via the blood stream will have difficulty diffusing into the focus far enough to reach the offending organisms. At the same time, in a well localized

lesion the opportunity is afforded for the local application of the drug in question.

3. The frequent presence of multiple organisms present. In such instances, there may be synergistic action between the organisms present, and one or more of the species in any given infection may be either resistant to the action of the administered drug or antagonistic to it.

4. The frequent necessity for removal of debris and repair of tissue which may require more nutritive elements than are needed for the recovery from a medical infection.

Spontaneous surgical infections in contradistinction to those following injury are, in the very beginning before there has been any breakdown of tissue, similar to medical infections. Here there is a diffuse inflammation which may be called a cellulitis. Some surgical infections remain in the stage of cellulitis for several days, and tissue breakdown is slow. If drugs can be given before there is a breakdown in tissues, it is reasonable to believe that they do not meet with the difficulties mentioned above but have a more favorable opportunity to contact and control susceptible organisms.

These facts about surgical infections are in themselves obviously accountable for many failures as well as poor results.

Probably the most frequent reason for penicillin failure is the presence of organisms capable of producing penicillinase, and following this, the presence of highly resistant strains of staphylococci or streptococci.

Inadequate administration or undue delay in administration accounts for some poor results, and inadequate surgery is certainly responsible on occasion.

Penicillin as we know it is made up of at least four fractions, known as F, G, K, and X. The X fraction is the most effective. G and F are next and about equal, and the K fraction is least desirable, partly because it is so rapidly broken down and excreted. As produced commercially, fractions G and K have constituted the balance of the yield of penicillin, and in the past the unsatisfactory fraction K has sometimes been present in excess. This undoubtedly explains many instances of failure in the use of penicillin.

Conclusion

Penicillin, then, has found its place in surgery. It is not a panacea, but is a powerful adjunct to good surgical treatment. The fact that almost two-thirds of the general run of established surgical infections may be controlled by its use, either alone or in conjunction with surgery, catalogs it as a spectacular advancement in therapy. Its

effect on staphylococcal septicemia labels it as a modern miracle drug.

The chief causes of failure in the application of penicillin is the presence of resistant and non-sensitive organisms, and the presence of penicillinase producing bacteria.

Diseases and infections which are susceptible to penicillin are now well cataloged, and when careful bacteriologic studies are possible, more accurate prediction of results is possible.

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HEALTH GUIDANCE IN MATURITY

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In this country statistics¹ show that life expectancy has now reached 65 years. A white adult who attains the age of 40 years has an expectancy of over 70 years of life. The normal old age period or senescence is preceded by the "ripe age" or maturity, generally considered to be from 41 to 60 years. It is in this period of maturity that we can give our patients valuable guidance which will help them grow old normally and intelligently. Warthin² states, "The possibilities of a normal old age are great; it is the period of ripeness of experiences and observation, of the contemplation and philosophic evaluation of the world about us, of quiet brooding and the creative possibilities engendered by such. Since the mental powers are preserved longer than any other function in senescence, happy is that man who comes into his old age with the capacity for intellectual pleasures fully developed not in one line alone, but in many: in literature, art, music, and science. Diversity of interests keeps the mind young."

Health guidance in maturity is a type of preventive medicine deserving emphasis and is prac-

ticed more or less by most physicians. The "Old Family Doctor" considered it one of his duties to direct his patients' lives through this period, and much of his deserved praise resulted from this phase of his work. In recent years attention has been diverted from this type of management by the great advances in diagnosis and therapy. Many of us are increasingly more concerned with learning the proper way of living and managing our patients accordingly. Granted that we have no control over the hereditary influences on the individual's involution, there are other phases of that involution which we can influence by proper management.

The starting point of this management is the periodic health examination. Here by a careful history we can discover important factors influencing health. The family history will reveal any familial tendencies toward certain diseases such as cancer, diabetes, anemia, or those of the cardiovascular system. The personal history will indicate the patient's type of work, and, if there are associated industrial hazards, steps may be taken to eliminate them. Habits will be discussed and corrected if indicated. The history of past illnesses or injuries, particularly the ones having a crippling effect, are elicited. The physical and laboratory examination may aid in the discovery of malignancy, heart failure, anemia, or diabetes in the earliest phases before they become clinically significant to the patient. Other remediable defects or disease processes may be discovered.

We must advise this group of patients about the importance of a nutritionally adequate diet.³ At present the diet considered best for the aging is one high in protein, moderate in carbohydrate and low in fat. The vitamin content should be higher than average. The optimum diet has not been determined and needs further investigation. Overeating with resulting overweight increases mortality 1 per cent for each pound over normal weight. Weight reduction (when necessary) should be encouraged at an early age, because it is very difficult for older persons to reduce.

Another aspect of health guidance in maturity pertains to work and play, which should be properly balanced. Work is most essential. The individual derives the greatest satisfaction from it when it is constructive in nature. The majority enjoy their work; if not, at least they can tolerate it because the end result gives them either leisure or the material things they desire. When work is enjoyable and constructive, it usually provides relaxation. Play is work completely lacking in responsibility. It affords rest when properly balanced with work, and when taken as exercise out-of-doors, it is especially valuable.

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A healthy psychologic environment is essential in this guidance. Fear and prejudice must be eliminated, and a realistic attitude toward aging developed. Recent investigations⁴ indicate that the normal physiologic adaptation to stress may be overstimulated by emotional tension and disturb the balance of the sympathetic nervous system. This disturbance may be the etiologic factor for some of the diseases of middle and old age. Many persons are under emotional strain and need psychologic counseling. We must be patient and sympathetic and do all in our power to produce emotional stability. The development of substitute vocations and avocations which can be used when the retirement age is reached should be encouraged. For most individuals retirement is unsatisfactory, for they do not know how to use their leisure in a constructive manner.

These are but a few of the problems involved in guiding health during mature age. Stieglitz⁵ states, "The differences between the results of planned and cultivated senescence and mere passive aging are similar to a cultivated garden and one choked with weeds. Yield proportional to cultivation."

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THE FAMILY PHYSICIAN AND THE SCHOOL HEALTH PROGRAM

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What is school health? Basically it includes those services necessary to protect the children while at school, plus a certain amount of health education which should be sufficient to make the young people, when they have finished school, intelligent about their own personal health needs and competent citizens in regard to the public health problems for which they may have a degree of responsibility.

Not long ago somebody pointed out that in order for a school child to have any interest shown in his health, he must first have something obviously wrong with him. Perhaps such a situation is brought about because of the interest which can be aroused when figures are stated concerning the many physical and mental handicaps existing among school age children. For these handicapped children special educational considerations must be given if they are to receive the best education the schools can provide. The figures on handicapped children run something like this. Some

23,000,000 to 28,000,000 children are enrolled in our elementary and high schools and while figures vary, a general estimate indicates that 13,000,000 children suffer from a physical handicap of such severity as to hamper their work in school. Among the more serious handicaps are the 4,000,000 with poor vision, 1,000,000 more who are deaf or hard of hearing, 373,000 orthopedic cripples, 1,250,000 with low vitality, and 200,000 with epilepsy. These figures do not include an estimate of the large number of children who are mentally handicapped or who come from such poor home environments as to render the ordinary schooling they receive inadequate and ineffective. But from both these groups of children come the social misfits and the chronic malingerers around whom it is necessary to plan most of our social welfare programs. Many of these children, of course, are under the care of physicians, but many others are not receiving medical care. To this point I wish to return later.

In what ways have the schools, as such, recognized their responsibility not only to these handicapped children, but to the so-called normal child in whom no one is supposed to be much interested. Once upon a time open air schools and special services for malnourished children were considered vital parts of a good school health program. Some years later these were evaluated by experts and the decision finally reached that if they were good services for handicapped children they were equally good and necessary for all children. Thus, steps have been taken and recommendations made to inculcate the worthwhile features of the open air school and special nutrition services into the entire school program. Interest in the school environment, which includes those building features of light, heat, ventilation and water supply, are being given increased attention by administrators, medical people, engineers and nurses. The effect of the school environment on sight and hearing, the spread of communicable diseases, fatigue and nervous stability are now considered by school systems with adequate health programs as important to all children in the school and not only to those with physical or emotional difficulties.

Many books have been written on the subject of school health, and a twenty minute dissertation on the subject could not possibly do justice to all of the aspects involved. By selecting for emphasis in this paper the medical and nursing problems of the school, I do not wish to minimize the value of a wholesome interest on the part of the local medical profession in the total school health program including the kind of school buildings in which the children work and the type of health teaching they receive from the example set by

their elders and from the textbooks provided. I am sure most superintendents of schools not only would welcome but actually feel the need of an opportunity to discuss with interested medical men those health provisions the medical profession feel should be provided the youngsters in their community. Wholesome, constructive criticism made by informed local medical people concerning unwholesome school building conditions, physically and emotionally handicapped teachers in service and of poor community attitudes toward those procedures necessary to protect the children would have a very salutary effect upon child health.

One of the more difficult problems facing school health personnel lies in their efforts to control the spread of communicable disease. School nurses and teachers while not diagnosticians must be first class "suspecticians." To be even moderately effective they must "suspect" early in the first stages of a child's illness. When children with a minimum of symptoms are sent home, busy mothers are often upset and feel that the nurses and teachers are overly solicitous, but it would seem better to err for a day or so in the realm of the overly cautious than to take a chance of waiting for a full blown case of a disease to develop. The family physician is a much needed school asset when he is in sympathy with the efforts which the schools make to get ill children under early medical and nursing care as well as in the efforts made to control the spread of communicable disease insofar as it is possible. In schools not employing a full time physician, and I believe in Iowa no school system does, the school must rely upon the opinion of the family physician as to whether or not the excluded child's condition is communicable and when the child is ready to return to school. Since second hand word-of-mouth information is all too often inaccurately repeated, it is usually necessary for the physician to put in writing the statement he wishes given to the school. The school, too, owes to the physician the same courtesy of putting into writing the reasons for excluding a child and the suggestions the excluding person, nurse or teacher, makes to the parent as to the further follow-up of the child's condition.

Up to this point this paper has been devoted to problems for which every school administration has a legal responsibility and which responsibility cannot be delegated to any other authority, even the official health department of a municipality. The rest of the paper I should like to devote to school medical examinations and the provisions made for remedying conditions of ill health or correcting defects of a medical nature.

The ideal child health program would be for

every child to be under the care of a family physician who makes an annual medical examination and who can persuade the family to follow through on all needed care. The family physician would then make recommendations to the school authorities for any modifications in the school program which are necessitated by a child's physical condition. These modifications would include recommendations for the amount and kind of physical activity suited to an individual child, the length of the school day, special rest periods, supervision of noon lunches, special seating arrangements to improve posture, sight or hearing, and for many other factors in which the school can make adjustments. Since this ideal is so far from any existing actuality, medical examinations of children are now required by legal statutes in thirty-eight of the forty-eight states of this country. The most extreme statute exists in Pennsylvania which makes mandatory a biannual complete physical examination of every child enrolled in any school of the state. The law goes still further in limiting the number of children a physician may examine to four per hour and the dental examinations to eight per hour. The responsibility of seeing that the requirements of this action are carried out is placed in the hands of the superintendent of schools. The Iowa law makes physical examinations possible but not required except in cases where children are to be assigned to classes for special education such as those for mentally deficient or physically crippled children.

A few school districts in Iowa do provide medical examinations of all children enrolled in school. The Des Moines school system, for example, has seven part-time physicians who examine all children every three years plus annually, all athletes, all new children, special education children, all children not assigned to a full activity program and any other children selected by the teachers and nurses as not seeming to be at their peak of physical efficiency. Parents are invited to be present at the time of the examination to receive the advice of the physician. To those parents who are not present, written notices of defects in states of health are usually sent. In many cases it is often expedient for the school nurse to make a home visit for the purpose of making adequate explanation to the parents and helping them make plans for securing necessary medical treatment.

Pronounced differences of opinion exist among health experts and school administrators about the school medical examinations. Some of these are administrative and some are medical. One of the more important problems concerns the purpose of the whole program. Can a physician seeing twenty

children for the first time, having an hour and a half to two hours to examine them in a school environment without laboratory facilities, really accomplish anything of medical value for the individual child? I am not prepared to offer an opinion on that problem since it involves a medical insight. But I am convinced from having seen thousands of such examinations given that from the public school administrator's point of view two valuable outcomes are possible. The first value comes in the overall picture the school administrator gets of the health needs of the children in the various areas which may make it advisable to plan more carefully certain administrative policies of the school such as the type of health teaching offered, supplementary food services, rest periods, parent education programs and the like. The second value comes to the individual child and his parents in building desirable attitudes toward medical supervision. The opinion of a physician that medical care in an individual situation is necessary far outweighs in influence any other school person's opinion.

The attitude of the family physician toward the findings of the school medical appraisal is another problem. The late Dr. Fred Moore once said the value of the school physician's work is in direct relation to the opinion which the rest of the medical profession have for the school examiner's professional standing. For this reason alone the best physicians of the community are needed in the schools having medical programs and as Dr. W. W. Bauer of your own American Medical Association says if the program is to be a success "the examination should be sufficiently comprehensive and careful to command the respect of the practicing physician." Differences of opinion will occur but these differences are much more easily ironed out when the school examination of the child has been carefully made by a competent examiner.

Probably one of the more common problems in Iowa is the problem induced by the school nurse who works without direct medical supervision. She is in a rather difficult position in which she must please the school authorities and parents as well as attempting to be understood by the local medical men. School superintendents and principals are apt to make demands on her which are contrary to good public health nursing practice. All too frequently the nurse employed in a public school system is not even prepared by advanced education beyond her nurses' training to be a school nurse. She then does not know she violates public health nursing principles nor does she have a physician to counsel with her as to the reaction of the medical society toward her

activities. I would like to suggest that the medical society itself approach the superintendent of schools in any community where such a situation exists and propose the appointment of a medical person to act as a liaison officer for the formulation of common policies acceptable to the board of education and the medical society. I am not suggesting that this be done without monetary recompense even though the fee would have to be quite nominal. Those of you who come from communities where a physician is a member of the board of education are likely to think that such membership serves the above purpose. This is not a correct assumption. Members of a teaching staff do not ethically approach members of boards of education over the head of the school superintendent. Thus the nurse is not able to discuss her problems with a physician member of the school board with the same frankness she should be able to do with a physician who is an employee of the board of education and also responsible, as is the nurse, to the superintendent of schools.

In drawing this discussion to a close perhaps it would be well to again define the term "school health." According to the report of the American Association of School Administrators made in 1942 school health is concerned with six areas:

1. A healthful school environment.
2. A health guidance program for students and teaching personnel.
3. Services to meet emergency health conditions which demand immediate care.
4. The teaching of accurate health information graded to the level of the child's capacity to understand.
5. The establishment of sound health habits and attitudes.
6. The provision of a modified school program for meeting the needs of the exceptional child.

When the school makes an effort to provide the essentials of the above outline one may say, "That school has a school health program."

PROS AND CONS OF PENICILLIN THERAPY IN OTOLARYNGOLOGY

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1. Give the drug early.
2. Give the drug in sufficient quantity. Inadequate dosage makes for chronicity and permanent fastness of organisms. Federal drug regulations were recently altered to prevent distribution of penicillin tablets intended for oral administration which contain less than 50,000 units of the drug. This change is made to prevent underdosage with

the resultant development of penicillin-resistant bacteria.¹

3. Continue the drug into the safe period of resolution.

4. Always take a history of allergy; it is possible to have reactions without previous injections of penicillin due to inhalation of moulds. Reactions vary from a localized wheal to a generalized erythema, or from a mucosol reaction of the nose to an alarming asthmatoïd diathesis.² Two types of reactions occur, immediate and delayed, immediate reaction occurring in twelve to twenty-four hours, delayed in seven to fourteen days. Generalized symptoms usually consist of urticaria with pruritis, vesiculation, periorbital swelling, arthralgia, myalgia, malaise and lymph adenopathy. Procaine hydrochloride intravenously, using 1 gram in 500 cc. of an isotonic solution of sodium chloride, has been effective in clearing up these generalized reactions.³

5. Always take a history of penicillin sensitivity, the method of administration and the dosage.⁴

6. Always take a history of trichophytosis, or fungus infections.

7. There is always a potential hazard of sensitizing a patient to penicillin. There is danger of precipitating an untoward reaction in a previously sensitized patient.

8. Untoward reactions are not always due to the toxic impurities but are due to the drug itself. Dr. Ben A. Neuman of Los Angeles finds that reactions due to penicillin today exceed 30 per cent. Dr. Barksdale of Bethesda, Md., states that 10 per cent of patients are sensitized to penicillin. They have stopped the use of penicillin in the dermatology wards because of allergic reactions. He reports one death developing exfoliative dermatitis and other symptoms such as involvement of the peroneal nerve and foot drop. This conclusion was reached after treating over 2,000 cases. Chow and McKee found that crystalline penicillin will combine with human albumin which may be antigenic or act like a haptén; this explains the many allergic reactions and will incriminate the active principle rather than the impurities.

9. Penicillin lozenges 1,000 units occasionally cause reactions such as bleb formations on the lips, uvula, soft palate and postpharyngeal wall; these areas also become dry, red, and sensitive. Excellent results have been obtained in Vincent's stomatitis using this form of medication, as well as preoperatively and postoperatively in tonsillectomies.

10. Benadryl can be used in allergic cases; in penicillin positive cases and in asthmatic cases

with good results, 50 mgm. t.i.d. often proves effective. Capsules of 25 mgm. or the elixer can be used in children. The drug has quite a few side effects that need to be watched, and it is better to start with small doses at first.

11. In allergic tests 100 units every three hours in questionable cases have been suggested.

a. Intradermal skin tests using 1 cc. of normal saline containing 250, 500, 1,000 units per test dosage. Take .1 cc. of these solutions for testing.

b. Patch test—1,000 units per gram in ointment form have been used.

c. Oral administration—1,000 units lozenges have been used.⁵

d. Oral administration—buffered tablets 50,000 units can be tried for sensitivity. D. M. Lierle and W. N. Paul advised using this method of administration only in minor infections and not major infections, in spite of obtaining high blood concentrations.

e. Skin tests with Trichophyton antigen 1:30 are used routinely in some clinics.

12. Penicillin becomes essential in those patients who show an aemia; it can also be used in the presence of pronounced leukopenia and agranulocytosis.

12a. Administration of penicillin does not require the number of complete blood counts and urinalysis that sulfonamides do. It does not injure the hematopoietic system or the kidneys.

13. To prevent chronicity and complications, a very important syndrome of penicillin therapy, one should utilize Biggin's theory of "persisters." Set up a treatment schedule to catch the persistent organisms as they begin their growth again. Todd in his work confirms this theory. Treat for three or four weeks after an apparent cure to eliminate any hibernating organisms.

14. The indiscriminate use of penicillin is to be condemned. Patients may be extremely vexed if they have been treated for minor illnesses and become sensitized, then develop a major illness and find they are unable to be treated with penicillin.

15. Formerly established methods often give as good results without resorting to penicillin. Try the established routine methods first before resorting to it.

16. Alpha and Beta hemolytic streptococci often are sulfa resistant, but respond well to penicillin. They are the most frequent cause of throat infections.

17. Höffy Meyer and Chaffee state that penicillin is most effective in actively multiplying organisms, preventing the assimilations of growth factors necessary for cell divisions. It inhibits the metabolism of the intracellular enzymes.

18. Penicillin is not a panacea for all diseases.
19. Acute bronchitis has responded well to inhalation therapy; chronic bronchitis has been more stubborn in its response.
20. Penicillin masks the presence of disease after all clinical signs have disappeared, so the physician should be constantly on guard for late complications. This is especially true in mastoiditis.
21. Take smears and cultures routinely to properly evaluate the organisms present and to regulate the dosage schedule. Virulent tests are also important.
22. Penicillin resistant organism is no contraindication to penicillin therapy. Often massive dosages given early will be of some benefit.
23. Dosages vary from 5,000 to 100,000 units per hour parenterally. For office routine penicillin in oil and wax, Romansky formula 300,000 units, proves very satisfactory at a time when hospitalization is a problem.
24. Penicillin has no deleterious effect on the ciliary action of the nasal and sinus mucosa in moderate concentrations and when used in isotonic saline solutions.
25. Control of mixed infections is difficult and explains some of the failures of penicillin therapy. This is often due to penicillinase-producing organisms which destroy the effectiveness of the drug.
26. Best results are obtained in cases where a pure culture of coagulase positive staphylococcus is present, but occasionally even this organism is penicillin resistant.
27. Other causes of failures are:
 - a. Associated tuberculosis and diabetes with arteriosclerosis.
 - b. Inadequate surgical procedures as well as delayed surgery.
 - c. Failure to get penicillin in direct contact with the organism.
 - d. Chronic infections with granulations and polyps formation, and osteomyelitis.
28. Good results have been obtained by using the Proetz technic with penicillin, 30,000 units per ounce in $\frac{1}{4}$ per cent tuamine in isotonic saline solution. This solution can be used also as a nasal spray, as nasal drops and gargle, every three hours in conjunction with the Proetz displacement method. This method was used and seems to aid a great deal in clearing up an associated acute and subacute otitis media. Spray the nose three times in succession five minutes apart pointing the atomizer in the direction of the eye so that the region of middle turbinates is reached. Patients so instructed seem to get better drainage and results. This combination of penicillin and tuamine often

produces a marked irritation to the mucous membranes. Penicillin and normal saline rarely do.

29. Preoperatively and postoperatively, penicillin therapy is an excellent routine procedure. Continue it long enough to try and prevent complications.

30. Penicillin and sulfonamide therapy has developed a syndrome of diminution of symptoms and clinical relapses, or chronicity and complications with the potential possibilities of transmitting penicillin and sulfonamide resistant organisms, in epidemic proportions, while acquiring an increase in virulence during transmission from one patient to another.

31. Good surgical procedures should never be altered because of penicillin therapy.

Case I

H.B., a white male, aged 15, came into the office Apr. 26, 1946, complaining of swelling behind the left ear with very little pain. Ten weeks previously he had had a severe upper respiratory infection with pain in the left ear and discharge. He was given sulfonamide therapy by a local physician, resulting in an apparent cure. Two days prior to coming to the office he noticed a large swelling behind the left ear. His hearing was not impaired; he had no pain, was attending high school every day and feeling perfectly well. Examination revealed a perfectly normal drum; hearing for spoken voice was 20/20 and whispered voice 15/20. A large swelling over mastoid with very little tenderness was present; there was no nystagmus or dizziness. Clinically, the patient looked so well that it was difficult to realize that the mastoid was involved. Temperature was 98.6, pulse 88, respiration 20, white count 8,500 with 66 per cent neutrophils. X-ray report showed involvement of the entire mastoid which was an extremely large, pneumatic type. The middle ear had apparently cleared up entirely, the aditus evidently walling off the infection from the mastoid. At operation, the entire mastoid was necrotic, the cortex having an opening in it from which thick yellow pus was draining. The bone over the lateral sinus was necrotic, granulations had formed on the wall of the lateral sinus and a perisinus abscess was present. The tip cells were practically destroyed and the patient would undoubtedly have had a Bezold abscess very shortly. Pressure on the neck would force pus from the region of the tip of the mastoid. The dura was exposed in the zygomatic area. Cultures were taken and sent to the laboratory, but they were never reported. Pathologic report was subacute osteomyelitis. The patient was placed on 30,000 units of penicillin every

three hours intramuscularly one day prior to operation and continued for seven days. He made an uneventful recovery, leaving the hospital in ten days.

Summary: Sulfonamide therapy given ten weeks before gave the impression of clinically curing this patient. The patient had no complaints during the interval and returned to high school without any ill effects. The tympanic membrane and middle ear apparently cleared up during the ten week interval with practically normal hearing, while the infectious process continued in the mastoid. There was very little postoperative drainage following the use of penicillin parenterally. The wound healed well and the patient has had no complications during the past six months. The syndrome of complications and relapse is exemplified here.

Case II. Osteomyelitis of the Frontal and Maxillary Sinuses Due to Actinomycosis

Pilot, aged 28, was brought into the hospital with a severe nasopharyngitis, maxillary and frontal sinusitis. He had a swelling in the midline of the frontal bone which was quite painful and tender. An incision made over the swelling revealed necrotic frontal bone and an opening of about 1 cm. in diameter. The necrotic bone was removed. The patient was given daily irrigations with penicillin solution 30,000 units to the ounce and penicillin packs in the frontal sinuses and nasal passages, along with 50,000 units every three hours intramuscularly, for six weeks. The mucosa of the nose was extremely dry, to such extent that it was almost impossible to remove the mucopus secretions which had hardened. The nose had been previously treated with sulfathiazole powder which may have accounted for the present condition on arrival at this hospital. Cultures were positive for actinomycosis from the nose as well as from the frontal sinus. Penicillin solution passed freely from the frontal sinus into the nasal cavity. In spite of huge doses and persistent dosage as well as daily local treatments, his condition continued to grow worse. Three weeks after admission, a second area of necrosis occurred in the frontal bone and sequestra appeared during the irrigations. The patient's local and general condition continued to grow worse, when he was transferred to another army hospital.

Summary: Penicillin was ineffective in this case of actinomycosis in spite of surgical intervention and large dosages as long as the patient was under our care, which was about three months.

Case III

E.S., a white girl, aged 34, entered the hospital a very sick patient with a diagnosis of acute nasopharyngitis, otitis media purulent bilateral, mastoiditis, asthma severe with a loss of hearing in both ears. The patient lost her hearing at the age of two following scarlet fever. She had been wearing a hearing aid since she was seventeen years of age. Because of her severe asthma, an allergic test for penicillin was made, 100 units intramuscularly hourly for two doses, with no untoward result. Three hundred thousand units of penicillin in wax was then given, after which she was placed on penicillin 30,000 units every three hours for five days and sulfadiazine gr. xv every four hours; 50 mg. benadryl capsules were given three times a day for her asthmatic condition, and this dosage controlled the asthma. No local treatment to the nose was given. The ear was cleaned out daily and otosmosan used three times a day. Smear showed a strep infection. Urinalysis was negative, RBC 4,860,000, WBC 10,000, 77P, 10S, 6L, three eosinophils and four monocytes. Patient left the hospital in five days, both ears dry and asthma much improved.

Summary:

1. Test for penicillin sensitivity should be given in asthmatic cases before administering penicillin. Recent work, however, failed to prove history of allergy or asthma was very important in actual practice, in either the immediate or the delayed reactions.

2. Use large doses of penicillin early in the disease.

3. The use of benadryl is advisable in asthmatic patients as well as in patients sensitized to penicillin or sulfonamides. Adrenalin and ephedrine made this patient very nervous.

4. Penicillin and sulfadiazine are effective in cases of acute purulent infections of the middle ear and mastoids. Their uses are limited by the sensitiveness of the patient to these drugs, by the acquired "sulfonamide-resistance" or penicillin-resistance of the micro-organisms, and by the potential danger of masked symptoms.

5. This case was followed for three months without any complications.

6. She looked as if she would definitely come to operation and yet cleared up in five days.

Case IV

A.W., a white male, aged 55, came into the office with bilateral acute maxillary sinusitis purulent. Both antrums were punctured and washed

out with an alkaline solution, obtaining thick purulent pus from both sides. This was repeated the next day, obtaining very little pus. The third and fourth day the patient was treated without irrigation. By the fourth day he was practically well and was checked at the end of the week and the following week with no residual infections present.

Summary:

1. Established routine often gives good results without using penicillin in every case.
2. Save the penicillin and sulfa for the severe cases and avoid the danger of sensitizing the patient. They are not apt to be very grateful if they have become sensitized while being treated for minor ailments and later need the penicillin as a lifesaving procedure.

Case V

Mrs. V., aged 52, came in with a diagnosis of acute maxillary sinusitis purulent. Numerous gram negative bacteria resembling Morax-Axenfeld were present. The patient had previously been given considerable penicillin by her physician parenterally and orally to which she became sensitized. Blebs, pin point hemorrhages formed over the lips, palate and postpharyngeal wall; her hands and feet began to swell, and a fine rash appeared on her neck and chest. She was under the impression the penicillin lozenges irritated her lips and throat. She was treated by washing out her antrums with normal saline two days in succession and treated for four more days with good results. She refused permission to use penicillin to irrigate her sinuses.

Summary:

1. Penicillin was ineffective on the organisms present.
2. The patient became sensitized to penicillin.
3. The patient made a good recovery with routine treatment. Intramuscular penicillin therapy is not indicated in maxillary sinusitis as a rule.
4. Penicillin is not always effective, as there are often strains of bacteria in the penicillin sensitive group, which do not react favorably or which become penicillin fast.
5. Penicillin applied directly to the site of infection perhaps would have been effective and not have sensitized the patient.
6. Benadryl could have been used in this case had she permitted carrying on penicillin therapy.
7. Routine therapy should have been carried out first, before resorting to penicillin, avoiding the complications that sometimes occur from its use.

This syndrome of diminution of symptoms and clinical relapses corroborates the experimental evidence that these drugs have principally a bacteriostatic action and that certain strains of micro-organisms must become sulfonamide-resistant or penicillin resistant, but continue their biologic growth and resume their multiplying activities when the drugs are withdrawn. The practical and ominous clinical application of this phenomenon lies in its potentialities regarding the transmission of epidemic proportions, of sulfonamide resistant micro-organisms, and of unattenuated virulence through a community since such bacteria do not lose their sulfonamide resistant qualities but do acquire increased virulence by animal passage.

Penicillin resistant micro-organisms likewise lose their virulence, while retaining their ability to multiply on transfers in vitro and on animal passage without regaining either their sensitiveness to penicillin or their virulence. This does not necessarily mean that such micro-organisms are incapable of transmitting infection, since both of the above faculties are relative and will be modified by the reactions of the individual hosts. The recurrence of these micro-organisms is, as a rule, in symbiosis with other pathogens and of equal importance under such circumstances. We are, therefore, faced with the fact that the application of the sulfonamides and the antibiotics in the control of respiratory infection is limited. It is of interest to conjecture whether in the future we shall not revert to the usual medical and surgical methods of treating respiratory infections and their complications, because of the presence simultaneously of sulfonamide resistant and penicillin resistant micro-organisms which require doses of these drugs beyond the tolerance of the patient.

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INCIDENCE OF BRONCHIOGENIC CARCINOMA IN THE VETERANS HOSPITAL*

Roger E. Drown, M.D., Des Moines

Those working in the laboratory have been impressed with the apparent high incidence of bronchiogenic carcinoma in the Veterans Hospital, Des Moines, and wish to emphasize the importance of being cognizant of this form of carcinoma, especially in veterans of World War I. This article is not an attempt to prove or disprove an increase in the incidence of bronchiogenic carcinoma, since the series of cases here is small, the patients are of a selected age group and sex, there are few past records with which to make a comparison, and there has been a marked increase in the necropsy percentage. However, during the first three months of this year, the incidence here has been high as compared to that recorded in the literature.

The following table shows the incidence of bronchiogenic carcinoma in this hospital for the year 1946 and for the first three months of 1947.

Deaths	Necropsies	Carcinoma	Bronchiogenic Carcinoma	Bronchiogenic Carcinoma to all Necropsies %	Bronchiogenic Carcinoma to all Carcinoma %	Bronchiogenic Carcinoma to all Deaths %
1946 158	53	16	3	5.6	18.7	1.26
1947 38 (Jan. 1 to April 1)	23	8	5	21.7	62.5	13.1

The average age of those dying of bronchiogenic carcinoma was 51.

Although bronchiogenic carcinoma has not been emphasized as much in the medical literature or as widely publicized to the laity as cancers of other parts of the body, it is not a rare disease and comprises approximately 10 per cent of all malignant tumors at autopsy.⁵ Halpert⁴ in a review of 7,433 necropsies on individuals over 1 year old, found that bronchiogenic carcinoma was second in frequency only to carcinoma of the stomach. Rosahn¹² found carcinoma of the lung to be preceded in frequency only by carcinoma of the stomach and large intestine in a series of 4,150 necropsy protocols of the Yale University of Medicine, and Boyd¹ states that the lung is the third most frequent site for primary carcinoma.

Bronchiogenic carcinoma is more common in the male than the female, occurring in a ratio of

8:1.¹⁰ This neoplasm is most common in the sixth decade of life, the second largest number occurring in the fifth decade, and the third largest number in the seventh decade.^{3, 8, 11}

A review of the literature reveals many articles attempting to prove or disprove an increase in bronchiogenic carcinoma and, if there is an increase, whether or not the increase is real or apparent.^{1, 3, 6, 7, 8, 9, 11, 12} The authors agree that there is an apparent increase, but that there is an absolute increase is still controversial.

Primary carcinoma of the lung originates in the bronchial epithelium from anaplasia and/or metaplasia of the basal layer of cells. These carcinomas have been variously classified both as to their gross and microscopic appearance. Karsner⁵ divides them into four gross types: (1) nodular hilar, (2) diffuse infiltrative, (3) peripheral, and (4) miliary carcinosis. Whatever gross classification is used, there are no definite criteria by which the microscopic structure can be predicted with any degree of certainty.

Numerous microscopic classifications have also been employed, but the most applicable seems to be that of Boyd² which is (1) undifferentiated, (2) squamous cell, and (3) glandular or adenocarcinoma. The squamous cell type is the most common, tends to metastasize later than the others, and is therefore the type most amenable to surgical removal.

Dissemination of bronchiogenic carcinoma occurs in three ways: (1) direct and lymphatic extension through the lung, metastases (2) to regional lymph nodes, and (3) to distant organs. It is important to emphasize the high incidence of metastases to the brain, since the brain metastasis is often mistaken clinically for a primary brain tumor because the cerebral symptoms may precede the pulmonary symptoms.

Inasmuch as surgical therapy has made great advancement in the complete eradication of these neoplasms and offers the only hope of cure,¹¹ it is imperative that we be constantly alert for early manifestations of this malady and recommend prompt care.

Conclusions

1. Statistics in the literature show at least an apparent increase in the incidence of bronchiogenic carcinoma.
2. Statistics obtained from the necropsy material of this hospital show a high incidence of bronchiogenic carcinoma during the first three months of 1947.
3. In most cases the patients in this hospital have consulted their local physician before applying for hospitalization. Therefore, it is important for every physician to consider carcinoma of the lung during examination of a veteran, particu-

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larly of World War I, who has symptoms indicative of chronic pulmonary disease.

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College of Medicine
State University of Iowa
CLINICOPATHOLOGIC
CONFERENCE
April 28, 1947

Summary of Clinical Record

The patient was a woman, age 39 years, gravida 6 para 4, who was admitted to the hospital on Mar. 22, 1947. Her last menstrual period was Aug. 17, 1946, and the estimated date of delivery was May 24, 1947. Her first pregnancy was in 1940. It was uncomplicated and she delivered at term a normal male infant weighing 7 pounds, 7 ounces. The second pregnancy was in 1941 and was uncomplicated. The baby was a male infant who weighed 7 pounds, 5 ounces. It developed jaundice soon after birth and died on the fifth day. In 1942 there was a third pregnancy. It ended prematurely at the thirty-sixth week. The baby was stillborn and macerated. The fourth pregnancy was in 1943. It ended at the twenty-eighth week. The baby was stillborn and macerated. A fifth pregnancy in 1946 ended in a spontaneous uneventful abortion at the eleventh week. During the present pregnancy the patient had felt quite well. She had developed swelling of the feet and legs in the two weeks before admission. She had noted fetal movements on Mar. 19, 1947, but none since that date. Examination revealed the abdomen to be markedly distended. The uterus appeared to be larger than at the usual

term pregnancy. No fetal heart could be heard. The fetus presented by the vertex and the presenting part floated freely above the pelvic inlet. Both legs were edematous up to the knees. The blood pressure was 150/100 and there was three plus albuminuria. X-ray films of the abdomen showed a single fetus which was not quite at term. On Mar. 22, 1947, labor was induced by rupturing the membranes and administering castor oil and a few injections of pitocin. When the membranes were ruptured, 2500 cc. of amber amniotic fluid escaped. The patient had a spontaneous delivery of a female infant weighing 2700 gm., after a labor of three hours, forty-seven minutes. The labor was uncomplicated except that the patient had slight vaginal bleeding before the birth of the baby and lost 500 cc. of blood during the third stage. The baby was stillborn and slightly macerated. There was some edema of the subcutaneous tissues. The placenta was edematous and weighed 1575 gm.

The mother had an uneventful recovery following delivery. A transfusion consisting of 500 cc. of Rh negative blood was given. She was discharged from the hospital on the fifth postpartum day. The blood pressure at that time was 135/90.

IMMUNOLOGIC STUDIES ON THE FAMILY

The Patient
Blood: Group and Type OrhHr+
Serum... { anti-Rh agglutinins with titer of 1/32 anti-Rh blocking antibodies with titer of 1/1024
Milk..... { anti-Rh agglutinins with titer of 1/32 anti-Rh blocking antibodies with titer of 1/4096
The Stillborn
Cord Blood: Group and Type ORh'Hr+
Serum... { anti-Rh agglutinins with titer of 1/256 anti-Rh blocking antibodies with titer of 1/4096
The Husband
Blood: Group and Type Orh:Hr—
The First and Only Living Child
Blood: Group and Type Orh'Hr+

Autopsy Findings

The body was that of a female infant. It weighed 2250 gm. Much of the skin was macerated and only shreds of epidermis remained over most of the body surface. The exposed dermis was very red in color. The entire body was extremely edematous. The neck was thick and short, and the facies were broadened in appearance. The cranial fontanelles were widely open. All the organs were badly autolyzed. Microscopic sections were largely unidentifiable because of the advanced autolysis. The peritoneal cavity contained 300 cc. of dark brown fluid and there was 20 cc. of similar fluid in each pleural cavity. The liver weighed 230 gm. (normal weight at term, 78 gm.) but it could not be studied histologically because of autolysis. The lungs were unexpanded. The placenta was large, gray and weighed 1575 gm. The fetus/placenta weight ratio was 1.7/1

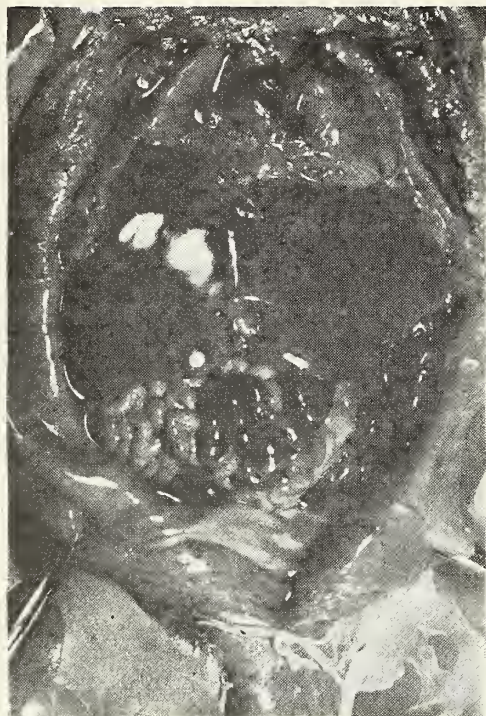


Fig. 1. View of abdominal viscera at autopsy, showing enlargement of liver and spleen and maceration of the skin.

(normal, 6/1). The placenta was composed of large edematous villi which showed considerable evidence of immaturity. There were a few Langhans cells remaining, and the villi were very poorly vascularized. The stroma was quite edematous. A few large phagocytic cells (Hofbauer cells) were found in most of the villi. The decidua appeared to be normal.

Necropsy Diagnosis

Erythroblastosis fetalis.
Fetal anasarca.

Clinical Discussion

Dr. J. H. Randall (Obstetrics and Gynecology): Erythroblastosis fetalis (hemolytic disease of the newborn) is essentially a disease of the fetus in which a blood factor present in fetal red cells passes the placental barrier into the maternal circulation. Immune bodies or agglutinins are produced in the mother and pass back through the placenta into the fetal circulation causing hemolysis of fetal erythrocytes. The destruction of the red corpuscles, the chronic changes produced in the tissues by the products of broken down cells, and the development of areas of erythropoiesis in certain organs of the fetus give rise to the clinical picture of erythroblastosis seen in the newborn.

The most common antigen producing erythro-

blastosis is the Rh factor. It is estimated that approximately 85 per cent of the white population are Rh positive and 15 per cent are Rh negative. In 92 per cent of the cases of erythroblastosis, the mother is Rh negative and the father and baby are Rh positive. Thirteen per cent of married couples will have the common blood pattern for erythroblastosis but only 1 in 25 to 50 of these will have erythroblastotic babies.

The Rh negative mother may become sensitized by the administration of Rh positive blood or by a pregnancy with Rh positive fetus. It is uncommon for a woman to give birth to an erythroblastotic baby with the first pregnancy unless she has previously been sensitized by a blood transfusion. The usual history is that the mother has one or more normal babies before she gives birth to an erythroblastotic fetus.

Clinically, three forms of erythroblastosis are recognized. The hydropic type is the most severe and is usually fatal. The baby is often premature although by weight it may be mature. It is usually stillborn or dies soon after birth. The baby has generalized edema and may have fluid in its body cavities. The placenta is pale and much larger than normal, often weighing 1000 to 2000 grams. It contains edematous villi which are poorly vascularized.

A second type, and the most common, is the icteric erythroblastotic baby. It is usually born alive at term and is slightly icteric or develops icterus soon after birth. The amniotic fluid and the fetal membranes frequently are bile stained. The placenta is usually normal in size and the villi are not hydropic and are well vascularized. About 50 per cent of the babies will survive if properly treated.

The third or the anemic type is the least common but has the best prognosis for the baby. At least 75 per cent of these babies survive if properly treated. The most characteristic feature of



Fig. 2. Maternal surface of swollen pale placenta.

this form is the anemia which develops within a few days or weeks after birth.

In all cases of erythroblastosis there is an anemia due to hemolysis of fetal red cells by the agglutinins which pass from the maternal to the fetal circulation. There are many nucleated red cells or erythroblasts in the fetal blood. The leukocyte count is elevated, due in large measure to the increase in nucleated red cells. In a differential blood count, nucleated red cells make up more than 15 per cent of the nucleated cells counted. The color index of the blood is greater than one, the plasma proteins are lowered, the prothrombin level is decreased, and the icteric index is elevated. Organs, such as the spleen and liver, are frequently enlarged and show areas of erythropoiesis.

The disease may have very little influence on the mother. In about 30 per cent of the cases,



Fig. 3. Low power photomicrograph of edematous, poorly vascular placental villi.

the mother shows the signs and symptoms of toxemia of pregnancy, such as edema, albuminuria, and hypertension. This occurs most often with the severe or hydropic type of erythroblastosis. Hydramnios is not uncommonly seen in the mother. Since the mother is Rh negative, she may suffer a severe reaction if given blood from an Rh positive donor during or after her pregnancy.

Pregnant patients should have an Rh determination on their first antepartum visit. In all cases in which the patient is Rh negative, the husband's blood should also be checked. In those couples who have the common blood pattern for erythroblastosis, Rh antibodies should be searched for at the seventh month of pregnancy and every two to four weeks until the end of the pregnancy. The appearance of the Rh antibody in early pregnancy, increasing to a high titer later, usually indicates erythroblastosis in the baby.

The question of interruption of the pregnancy when the Rh antibodies have attained a high titer should be considered. Some authorities prefer to

allow the pregnancy to continue to term. They feel that the hydropic type of erythroblastotic baby is either born dead or dies soon after birth, regardless of the stage of pregnancy, while in the other forms of erythroblastosis the babies usually go to term. Hemolysis of the fetal red cells is largely precipitated by the birth process. Therefore, they prefer to have a full-term baby with erythroblastosis than a premature baby. Other authorities advocate ending the pregnancy prematurely when the titer of antibodies is increasing. They consider prematurity to be less dangerous than a few extra weeks of intra-uterine life during which many antibodies will pass into the fetal circulation.

If the pregnancy is ended prematurely, it should usually be done not much before the ninth lunar month. The pregnancy is best terminated by inducing labor by rupture of the membranes, combined with injections of pitocin. Caesarean section has little place in the termination of pregnancy in erythroblastosis, especially if the baby is likely to be of the hydropic type. Labor should be conducted with as little analgesia and anesthesia as possible.

If the fetus is born alive, a red cell count, hemoglobin determination, and a differential leukocyte count should be made on the cord blood. If the blood findings substantiate the diagnosis of erythroblastosis, the fetus should at once be given a transfusion through the umbilical vein of Rh negative blood from a donor who is not the mother. As there is usually a severe anemia, oxygen should be given to the baby. Antibodies are transmitted through the milk and for this reason most authorities advocate artificial feedings.

Once the mother has become sensitized to the Rh factor, she will always give rise to an erythroblastotic baby when the fetus is Rh positive. If the husband is heterozygous for the Rh factor, half of his progeny should be Rh negative and half should be Rh positive. However, if he is homozygous for this factor, all of his progeny will be Rh positive.

Dr. E. L. DeGowin (Internal Medicine): Laboratory tests of the blood furnish answers to some of the questions which arise in hemolytic disease of the newborn.

(1) Determination of the Rh type of the pregnant woman (to the extent of learning whether she is Rh positive or Rh negative) is of some assistance to the obstetrician who will be on guard for the appearance of erythroblastosis fetalis if he knows that the woman is Rh negative and the husband is Rh positive. About 92 per cent of the cases of erythroblastosis are caused by isensitization of an Rh negative woman to the Rh

antigen in the red cells of her offspring. It should not be overlooked, however, that about 6 per cent of cases result from sensitization to the Hr factor (in these instances the woman is always Rh positive) and a smaller number to the A or B antigen in the red cells.

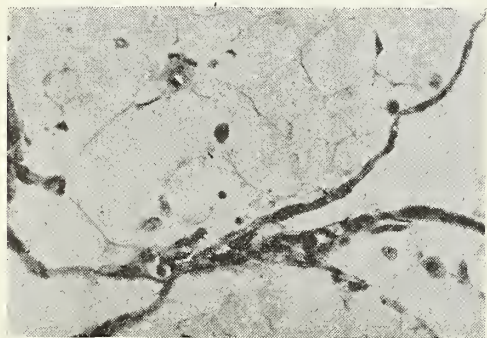


Fig. 4. High power photomicrograph showing several large phagocytic (Hofbauer) cells in placental villi.

(2) Frequently laboratory tests will reveal the fact that the pregnant woman is developing sensitivity to the Rh or Hr factors. Early in Rh sensitization, anti-Rh agglutinins develop and increase in titer as the degree of sensitization increases. As isosensitivity becomes more severe, blocking antibodies appear. The presence of the latter usually indicates a grave prognosis for the fetus.

(3) The third question which is frequently asked of the physician who has a patient with erythroblastosis is the outlook for future pregnancies. The answer to this problem in the Rh negative woman depends on whether the genes of the husband are homozygous or heterozygous. In all somatic cells the chromosomes are paired so that each member of a pair carries one gene for Rh type. When germ cells are formed, the pair of chromosomes is separated so that one chromosome from each pair appears in a different germ cell (either sperm or ovum). If the male individual is homozygous and all his genes contain the factor for Rh positiveness. If his genes are heterozygous, the red cells will also be Rh positive when tested with anti-Rh serum in the laboratory. When the chromosomal pairs separate, however, in the formation of a sperm, one gene may possess the factor for Rh positiveness and the other member of the pair will have the factor for Rh negativeness. If the Rh positive sperm unites with an Rh negative ovum the individual will be Rh positive. But if two Rh negative germ cells

(sperm and ovum) unite, an Rh negative individual will result. Should the mother of this individual be sensitized to the Rh factor, her antibodies will have no effect on the Rh negative offspring.

The question of whether the husband is heterozygous or homozygous sometimes can be answered in the laboratory. Typing the blood of the surviving children may reveal one or more to be Rh negative. This is proof that the father is heterozygous, provided it is certain that he is the father of the other children. Another method applies in some cases. If the father belongs to subtype Rh₁ or Rh', and his cells can be shown by a special antiserum to be Hr positive, he is heterozygous and there is a chance that he may father Rh negative individuals in future pregnancies.

In the case under consideration, the laboratory findings were unusually revealing. The presence of the Rh blocking antibodies in the blood of the mother indicated a high degree of sensitization in the mother which was confirmed by the delivery of an edematous fetus. The antibodies were present in her milk and also in the cord blood. The subtypes of the father and the offspring were such that the genotypes of the entire family could be established with certainty, according to Wiener's hypothesis. The only possible genotype of the father which could account for the children's subtypes and be Hr negative is R^1R' . Since the children were of the subtype Rh'Hr+, they must have derived a recessive gene r from the mother and their genotype is, therefore, R^1r .

MISSISSIPPI VALLEY MEDICAL SOCIETY MEETING

The twelfth annual meeting of the Mississippi Valley Medical Society will be held in the municipal auditorium, Burlington, October 1, 2 and 3. Over twenty-five clinical teachers from the leading medical schools will conduct this postgraduate assembly whose entire program is planned to appeal to general practitioners.

There will be over thirty technical and scientific exhibits, a noonday round-table luncheon, and a banquet preceded by a social hour. Dr. Edward L. Bortz, President of the American Medical Association, will be the principal banquet speaker, together with the Presidents of the Illinois, Iowa, and Missouri State Medical Societies.

For the first time in the history of the organization no registration fee will be charged. All ethical physicians are invited to attend. A detailed program may be obtained from the Secretary, Harold Swanberg, M.D., 209-224 W.C.U. Bldg, Quincy, Illinois.

STATE DEPARTMENT OF HEALTH



OCCUPATIONAL DISEASE COMPENSATION LAW

Summary of the Iowa Law

Prepared by

Industrial Hygiene Section

Division of Public Health Engineering

State Department of Health

The Occupational Disease Compensation Law enacted during the meeting of the last legislature will have considerable importance to the medical profession in Iowa. This importance may be expected to increase as industrial activity in the state grows.

The law, as enacted, is designed to extend the scope of the existing Workmen's Compensation Law, which covered accidental injuries only, to include workers incurring disablement or death from exposures to industrial health hazards. Disablement is defined in the law as the event or condition where an employee becomes actually incapacitated from performing his work or from earning equal wages in other suitable employment. Important phases of this statute are outlined in the following paragraphs.

Scope of Law

The new law is of the schedule type, defining and covering sixteen conditions or diseases. It will be administered by the State Industrial Commissioner, becoming effective on Oct. 1, 1947, and is not retroactive beyond that date. Employers may, at their own expense, require employees to submit to a physical examination prior to Oct. 1, 1947, and within ninety days of employment after that date. If an employee is found to be suffering from or affected by an occupational disease, the employee may be required to waive any claims of compensation under the provisions of this law as a condition to continued employment.

Occupational Diseases Defined

The law defines occupational diseases as those which (1) arise out of and in the course of the employment; (2) have a direct causal connection with the occupation; (3) follow as a natural incident from injurious exposure occasioned by the

nature of the occupation; (4) must be incidental to the character of the occupation; and (5) must not be independent of the employment. Under the law, only those specifically listed will be considered as compensable occupational diseases. No employer shall be liable for any compensation for an occupational disease unless the disease is due to the nature of the employment in which the hazards actually exist, are characteristic of and peculiar to the occupation, and the disease actually arises out of the employment.

Schedule of Compensable Diseases

The schedule includes: (1) lead poisoning; (2) mercury poisoning; (3) poisoning by nitrous fumes; (4) poisoning by carbon monoxide; (5) poisoning by benzol or by nitro and amido derivatives of benzol (dinitrobenzol, aniline) and other aromatic hydrocarbons or their preparations or compounds; (6) dermatitis; (7) zinc poisoning; (8) manganese poisoning; (9) brucellosis, synovitis, or tenosynovitis from continued or repeated pressure on the parts affected; (10) chrome ulceration of the skin or nasal passages; (11) cyanide poisoning; (12) brucellosis; (13) erysipeloid from swine; (14) silicosis; and (15) conjunctivitis from radiant energy.

Limitations on Brucellosis

The law stipulates that the diagnosis of brucellosis must be confirmed by a positive blood culture for brucella organisms, or at least two successive agglutination tests, not less than seven nor more than ten days apart, which shall be positive in a titer of 1/160 or higher. The specimens for these tests must be drawn by a licensed practicing physician or osteopathic physician, and immediately delivered to the State Hygienic Laboratory of the State Department of Health at Iowa City. Each specimen taken for this purpose must be submitted in a container upon which is plainly printed the following: (1) name and address of the subject; (2) date specimen was taken; (3) name and address of subject's employer; and (4) a certificate by the physician or osteopathic phy-

sician that he took the specimen from the named subject on the date stated, over his signature and address. The State Hygienic Laboratory, upon completion of the test, will send a report of the result of the test to the physician or the osteopathic physician from whom the specimen is received and also to the employer.

Provisions for a Medical Board

The law provides for a medical board whose purpose is to investigate all controversial medical questions and compensation claims, and to report its findings to the Industrial Commissioner. This board will consist of the Industrial Hygiene Physician of the State Department of Health and two physicians selected by the Dean of the College of Medicine, State University of Iowa, from the staff of that college who shall be qualified to diagnose and report on occupational diseases.

The report of the medical board will be submitted to the Industrial Commissioner and will become a part of the record of the case. Copies of the report will be forwarded to the claimant and to the employer. The members of the board will not be prohibited from testifying in official hearings on pertinent cases.

PUBLIC RELATIONS RESPONSIBILITIES OF HOSPITALS AND DOCTORS OF MEDICINE

One writer says, "Public relations is the sum total of all the impressions made on the public through policies, services, value of the product and contacts of every conceivable nature." With that definition shall we take a minute for a little introspection of our public relations work for the Iowa Medical Plan to date?

Five years ago it seemed an almost hopeless task to even plan for any phase of a physician-sponsored medical care plan, although the more intelligent people were asking for a plan comparable to Blue

Cross which would assure them of some prepayment method for more adequate medical care for themselves and their families.

Today the picture is changed. In a report made at the session on Blue Cross-Medical Plan relationships held in connection with the semi-annual Conference of Blue Cross in April, Frank E. Smith, director of Associated Medical Care Plans, stated that fifty-six medical societies in thirty-one states had secured 5,125,000 members and also predicted that by Jan. 1, 1948, such plans would be operating in every state.

Blue Cross Plans in the last decade have enrolled close to 27,000,000 persons in the most rapidly growing voluntary health movement that the world has ever seen. These Plans have unprecedented good will, but the thinking people realize that hospitalization is only a part of the need.

The Blue Cross Plans in Iowa, Hospital Service, Inc., of Iowa and Associated Hospitals Service, Inc., have enrolled about 450,000 members to date—nearly a half million persons since 1940.

Through the untiring efforts of forward looking men in the profession our Iowa Medical Service Plan was started in 1945. It has 22,000 members as of May 31, 1947. With its close association with the Blue Cross Plans it would seem that the growth of membership in this plan might move even faster. When the hospitals started the Blue Cross Plans they depended not only on the endorsement of the local communities but on the good sponsorship of the doctors. As a result, when people turned to their family doctor for advice on it he gave his hearty approval.

Today the hospitals stand ready and willing and are returning this courtesy to the doctor-sponsored plan. However, there is one predominately different factor present in the operation of a truly efficient medical plan. That factor is the involvement of the close doctor-patient relationship which must remain individual at all costs. Psychologically and for best health results this relationship of confidence must not be changed. The one great contribution that the doctors can give their plan is the very definite ex-

(Continued on page 342)

MORBIDITY REPORT

Diseases	May '47	April '47	May '46	Most Cases Reported From
Diphtheria	10	2	21	Johnson, Madison, Polk, Pottawattamie
Scarlet Fever	94	145	267	Clinton, Linn, Scott
Typhoid Fever	0	4	6	.....
Smallpox	1	0	4	Linn
Measles	1730	859	1520	Des Moines, Dubuque, Linn, Polk
Whooping Cough	106	54	139	Black Hawk, Clinton, Greene, Woodbury
Brucellosis	31	33	16	Scattered
Chickenpox	392	336	268	Black Hawk, Dubuque, Woodbury
German Measles	17	5	7	Dubuque, Boone, Story
Influenza	71	6273	0	Buchanan, Buena Vista, Butler
Malaria	2	1	31	Calhoun, Pocahontas
Meningitis	4	8	7	Sac, Woodbury
Mumps	76	67	217	Black Hawk, Linn, Woodbury
Pneumonia	12	20	14	Dubuque, Marion, Polk
Poliomylitis	4	1	8	Dubuque, Polk, Pottawattamie, Woodbury
Tuberculosis	63	65	89	For the State
Gonorrhea	157	102	187	For the State
Syphilis	132	115	126	For the State

The JOURNAL of the
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Vol. XXXVII JULY, 1947 No. 7

Highlights of the American Medical
Association Meeting

The Atlantic City session of the American Medical Association, celebrating as it did the first hundred years' existence of the association, was very well attended and greatly enjoyed. The figure for registrations at 11 a. m. Wednesday morning, June 11, had reached 13,608, and the final count probably showed more than 15,000 physicians registered by the time the session closed Friday evening.

The House of Delegates had all but two delegates present. A great deal of business was brought before the assembly, and two extra sessions were necessary in order to pass upon it. Many foreign guests were introduced to the House, most of them bringing greetings from their country or association.

The Convention Hall in Atlantic City is admirably suited for housing technical and scientific exhibits, which was an advantage in view of the large number of persons visiting the exhibits. Each year the firms in the technical exhibit seem to strive to increase the value of their presentation; this year was no exception. Much could be learned from a careful visit to this part of the meeting. The scientific exhibits also were of very high caliber and attracted large crowds of interested physicians. Iowa physicians may be interested to know that the Silver Medal was presented to a group from the University of Chicago Medical School in which Dr. Edward R. Woodward, son of Dr. Lee R. Woodward of Mason

City, had a prominent part; the Bronze Medal to Dr. Carl F. Jordan and Dr. I. H. Borts for their exhibit on brucellosis; and Honorable Mention made of an exhibit from Mayo Clinic in which Dr. Robert L. Parker, Jr., participated.

The scientific sections were very well attended. Large numbers of physicians heard the invited speakers from foreign countries and undoubtedly a great deal of friendly feeling was engendered by the welcome given these guests. Indeed, the predominant feature of the meeting might be said to be the friendliness evident in the convention hall and the scientific sections.

A complete report of the House of Delegates meeting will be given in a later JOURNAL, but Iowa physicians may be interested to hear that the main emphasis was on the general practitioner and how to encourage and assist him as well as how to attract young doctors into the field of general practice.

Getting the Patient Back on the Job

A hospital was originally described as "a friendly place for the reception of guests." During the Dark Ages the church did little to advance medical science over which it had control, but managed to preserve medical lore and found hospitals which became great medical schools. Gradually hospitals degenerated into pest houses, alms houses and asylums. Finally, Harvey, with his work on the circulation of the blood, opened the way to research. Although progress was slow, the hospital came to be recognized as a place for the most scientific treatment of disease. Discovery followed discovery with the increase of human material provided. How far the hospitals have wandered from friendly places for the reception of guests is discussed in the *New York State Journal of Medicine*.* Hospital guests became cases, with case history numbers. Surgeons hastened to remove "chronic appendices," drain "acute mastoids" and perform caesarian sections and pan-hysterectomies by the dozens. How many gastric ulcers were cured by surgery and the patient at the end of three weeks' convalescence found himself back at home with his scolding wife, miserably underpaid job and ever-increasing family.

In spite of the lack of sufficient beds, a hospital is still a friendly place for the reception of guests. A chaplain and social service workers are in evidence to provide each patient with some link to his church or home. Physiotherapy, occupational

*The Full Circle of the Hospital, *New York State J. Med.*, vol. xlvii, p. 1226-1227 (June 1) 1947.

therapy and psychotherapy aid in returning the sick individual to normal. The wisdom of early ambulation aids in getting the patient back on his feet.

It has become increasingly apparent, however, that the physician is obligated not only to assist in getting the patient out of the hospital but to stay with him until he is back on the job. The general practitioner has the distinct advantage of knowing the factors in the background which may have made his patient sick. The specialist may well devote more attention to this aspect of treatment. Such discerning and humanitarian measures will do much to promote friendliness in hospitals.

Treatment of Undulant Fever

According to available records Iowa annually has the largest number of reported cases of undulant fever in the United States. During 1946, 638 cases were reported in Iowa with only one fatality; in fact, the national mortality rate does not exceed 3 per cent. The first case of undulant fever was recognized in Iowa in 1926.

The diagnosis of this disease is made by positive blood culture. An agglutination test may be performed but a positive agglutination test is only a presumptive evidence of actual disease, inasmuch as there are a number of factors that give cross-agglutinations with a false positive test. The patient's history, physical findings, exposure, clinical course and complications must also be considered before the diagnosis of undulant fever is definitely established.

Finch* has been treating undulant fever for the past twenty years. He has obtained excellent results with the use of streptomycin therapy. The advantage of this treatment is evident in reducing the extremely prolonged exhaustive convalescence varying from four to twelve months which is common if the patient is treated by other methods. Streptomycin therapy brings about an immediate decrease in the elevated temperature, elimination of subjective symptoms (chills, sweats, anorexia, muscle weakness) and earlier return of appetite, absence of recurrences or relapses and decrease in the length of the convalescent stage. All patients treated by the method should receive daily 500 mgm. of ascorbic acid intravenously, as the blood level of this vitamin is usually lowered by this disease. This form of treatment will usually limit the convalescence to a sixty day period.

*Finch, George H.: Streptomycin therapy in undulant fever. *Am. J. Med.*, ii:485-490 (May) 1947.

Cooperation between the Physician and the Clergy

No one professional group has a monopoly on any effort that has as its goal human betterment. Every time doctors and ministers blunder, a new religion or health cult is born that will have nothing to do with either profession. Medicine represents about the only profession which adheres to exact scientific methods and is at the same time in active and sympathetic contact with human beings. The physician, due to his opportunity of professional privacy, has a unique position over any other professional man to inculcate the dictates of sound living.

A clergyman, on the other hand, is inevitably an influence on the mental health of his parish, whether for good or for ill. Not only is the clergyman consulted by numbers of people who are entirely unaware that what they really need is medical attention, but also he has a particular advantage in that people look to him for standards, goals and ideals. The term "health" connotes sanity of beliefs as well as soundness of body. The chief sphere of the physician's work is the body; of the minister's, the mind and spirit. Under no conditions should the clergy forget that they have a charge to keep with the sick and that in the hour of need their ministrations are as timely as those of the physician.

Many opportunities exist for the cooperation of the physician with the clergy. Through eugenics, curative and preventive medicine, the number of unhealthy individuals may be controlled. Child psychology may be promoted in the school, church and home. Mental hygiene clinics and the juvenile courts may be coordinated with public schools to make provisions for the wide variations in human abilities and capacities. There is a definite need for a thoroughly scientific body of sex instruction combining biology, psychology and sociology. Inasmuch as sex instruction is definitely lacking in the home, the clergy may well assume some responsibility in this field. Better provision should be made for organized play and recreation. The criminal gang must be replaced by healthy group life. Every honest and ambitious person should have the opportunity for interesting and remunerative work.

When the minister and the doctor become indifferent to their functions, the public becomes indifferent. When ministers and doctors develop complete confidence in their work and become devoted to it, there is a bond of sympathy established between them and the public which produces better ministers, better doctors, and better people.

NEWS NOTES

from the

Committee on Medical Service and Public Relations

A Report From the State Department of Social Welfare

The promise that the medical programs under the auspices of the Iowa State Board of Social Welfare would be decentralized has been made so many times that we are hesitant about making any more predictions.

The Aid to the Blind medical program has already been decentralized to some extent. That is, the predeterminations of the amount of medical care needed are now being made in the counties instead of in the central office. It is proposed that beginning August 1 of this year the medical care of the recipients under the Aid to the Blind and Aid to Dependent Children laws will be administered under the following plan:

Medical consultants will be selected in each county by the county board of social welfare and the county medical society. Under the new procedure any recipient receiving state aid under the Aid to the Blind or Aid to Dependent Children rolls who has either an acute or chronic disease will procure an authorization from his county welfare office. This authorization he will give to the doctor of his choice.

The doctor will treat the recipient as needed for the remainder of the month. If further treatment is necessary a new authorization will be issued for each month. The doctor will render his bill for services each month. These will be audited by the consultants, and the amount allowed will be accumulated for a three month period. At the end of this period, the amount will be added to the recipient's check. December, March, June and September have been selected as the months on which the medical allowance will be added. It will be itemized on the check as an additional sum for medical services already rendered, as will any items for drugs.

The doctor will be notified of the amount allotted to his patient-recipients and should collect from them just as from his regular patients. Federal and state laws prohibit direct payment to doctors, but it is our hope that this method of payment will mean that the doctor will be paid in full on a quarterly basis.

About 16,000 persons will be covered under these two programs. There will be some in each county of Iowa, so that all doctors need to know about the change in method of taking care of their medical needs.

Surgery and hospitalization are not included in this program. Because the recipients are supported from public monies, they are classed as indigents, and surgery and hospitalization will have to be paid for from county funds. Because they are classed as indigents, payment for medical services rendered them will be based upon the indigent fee bill and the use of the simplest remedies compatible with efficiency. In counties where there is no indigent fee schedule, charges will be based upon those usually charged for a very low income group.

Any doctor licensed to practice the healing art may participate. It is hoped that the change in procedure will mean that these persons will receive adequate medical care and that the doctor will receive payment for his services.

Harold J. McCoy, Medical Director
Channing G. Smith, Medical Consultant

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Committee on Medical Service and Public Relations May 25, 1947

The Committee on Medical Service and Public Relations of the Iowa State Medical Society met in the central office Sunday morning, May 25, with the following persons present: Drs. Fred Sternagel, H. E. Stroy, Martin I. Olsen and Charles T. Maxwell of the committee; Pres. H. A. Spilman, President-elect J. E. Reeder and Sec. John C. Parsons.

Meeting was called to order at 10:45 a. m.; minutes were read and approved, and a report was made on the letters written to the Iowa Congressional delegation in regard to the Old Age Assistance program. Further changes in the program of the State Department of Social Welfare were explained by Mr. Wieland.

The work of committee members was again divided, the following assignments being made: social agencies, Dr. Maxwell; insurance, Dr. Olsen; rural health problems, Dr. Shaw; veterans' affairs, Dr. Gutch;

(Continued on page 336)

TRANSACTIONS OF THE HOUSE OF DELEGATES

Iowa State Medical Society, Ninety-Sixth Annual Session

April 16-18, 1947

Wednesday Evening, April 16, 1947

The first meeting of the House of Delegates, held in connection with the ninety-sixth annual session of the Iowa State Medical Society at the Hotel Fort Des Moines, Des Moines, April 16-18, 1947, convened at 8:05 p.m. with Dr. Harold A. Spilman, president-elect, acting as Speaker.

The Speaker: The House will please come to order. The first order of business of this session will be roll call.

The Secretary: Mr. Speaker, there are two delegates named by their counties who, technically, are not members of the State Society. One has been nominated for life membership and will be eligible, but this body has not yet voted upon the application. The other is eligible, but his county society has not recommended him for life membership. Neither has paid dues, so that, technically, he is not a member. I will *move*, Mr. Speaker, that the roll call be constituted of the attendance cards which have been signed by the delegates, plus the two men of whom I have spoken.

The motion was seconded, put to a vote and carried.

Roll call showed the following doctors present:

DELEGATES

Adams—C. L. Bain
Appanoose—J. C. Donahue
Audubon—W. H. Halloran
Black Hawk—E. L. Rohlf, Jr.
Boone—B. T. Whitaker
Buena Vista—M. A. Armstrong
Cass—R. M. Needles
Cerro Gordo—C. O. Adams
Cherokee—C. F. Obermann
Chickasaw—P. E. Gardner
Clarke—C. R. Harken
Clayton—P. R. V. Hommel
Clinton—R. F. Luse
Dallas-Guthrie—A. G. Felter
Dickinson—T. L. Ward
Dubuque—D. F. Ward
Floyd—O. H. Banton
Fremont—K. Murchison
Hamilton—F. F. Hall
Hardin—R. J. Johnson
Henry—J. S. Jackson
Iowa—C. F. Watts
Jackson—F. J. Swift
Johnson—S. C. Cullen
Johnson—J. W. Dulin
Johnson—A. W. Bennett
Keokuk—D. L. Grothaus
Lee—L. C. Pumphrey
Lucas—Dean Curtis
Madison—I. K. Sayre
Mahaska—F. O. W. Voigt
Marion—E. C. McClure
Marshall—O. D. Wolfe
Mitchell—R. L. Whitley
Montgomery—Oscar Alden
Muscatine—C. P. Phillips
O'Brien—W. R. Brock
Osceola—F. M. Rizzo

Page—C. H. Flynn
Palo Alto—H. L. Brereton
Plymouth—M. J. Joynt
Pocahontas—W. F. Brinkman
Polk—M. I. Olsen
Polk—H. J. McCoy
Pottawattamie—G. V. Caughlan
Poweshiek—S. D. Porter
Ringgold—E. J. Watson
Sac—L. B. Amick
Scott—W. C. Goenne
Scott—George Braunlich
Shelby—C. V. Bisgard
Story—J. E. McFarland
Tama—A. J. Wentzien
Taylor—G. W. Rimel
Union—C. C. Rambo
Van Buren—L. A. Coffin
Wapello—C. A. Henry
Warren—E. E. Shaw
Webster—E. M. Kersten
Winneshiek—F. A. Hennessy
Woodbury—E. E. Morgan
Woodbury—C. T. Maxwell
Worth—S. S. Westly
Wright—R. D. Bernard

ALTERNATES

Benton—G. W. Yavorsky
Bremer—P. J. Amlie
Buchanan—F. F. Agnew
Butler—J. G. Evans
Davis—C. H. Cronk
Emmet—S. C. Kirkegaard
Fayette—A. F. Grandinetti
Greene—J. M. Jackson
Humboldt—C. A. Newman
Jasper—J. W. Billingsley
Jefferson—L. D. James
Kossuth—T. J. Egan
Linn—Philip Crew
Linn—C. H. Stark
Polk—W. R. Hornaday
Sioux—M. O. Larson
Washington—E. D. Miller
Wayne—J. H. McCall

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Councilor—R. N. Larimer
Councilor—E. F. Beeh
Councilor—J. C. Hill
Councilor—H. A. Housholder
Councilor—C. A. Boice
Councilor—J. G. Macrae
Councilor—W. S. Reiley

The Speaker: The next order of business is approval of the minutes of the Friday morning session, 1946.

Dr. Clyde A. Boice: I *move* the minutes of the Friday morning session, 1946, as printed in the July Journal be accepted and approved.

The motion was seconded, put to a vote and carried.

The Speaker: The next order of business is the President's address. Dr. Parker.

President Parker read his address and then assumed the chair while Dr. Spilman read his address.

The Speaker resumed the chair.

The Secretary: Mr. President, I ask your permission to bring before the House the question of delegates from Humboldt and Sac counties which sent no authorization for alternates. The delegates are not present. Dr. Newman from Humboldt county and Dr. Amick from Sac county have signed as delegates but we have received no authorization for either of them from his county. In the absence of the regular delegates, I ask the House what it would like to do about seating these men.

Dr. J. R. Dewey: I have been delegate from Sac county a number of years. As I came into the hall, Dr. Amick showed me a letter from the secretary

authorizing him to act as delegate. I move that Dr. Amick be seated as delegate of Sac county.

The motion was seconded, put to a vote and carried.

The Speaker: What is your pleasure regarding Dr. Newman from Humboldt county? Do I hear a motion?

The Secretary: I will move that he be seated.

The motion was seconded, put to a vote and carried.

The Speaker: The gentlemen will be seated.

The next order of business is reports of officers. The report of the Secretary, Dr. Parsons.

The Secretary: Mr. President, the Secretary's report is in the Handbook which is in your hands. I move that the report, pages 8 to 12 inclusive, constitute the report, and that it be approved by the House.

Dr. J. G. Evans: I second it.

The motion was put to a vote and carried.

Reports of Officers

REPORT OF THE SECRETARY

House of Delegates, Iowa State Medical Society:

Your secretary offers you the following report for the year 1946:

Membership

The membership record of the different counties will be found in tabulated form on the following pages. I wish to call your attention to a different heading in this tabulation, that of new doctors in the county. During 1946, 100 new doctors located in various counties of the state, many of them in the latter months of the year. It did not seem fair to count them against the county's membership average even though they might have joined on a prorated basis. I realize that many counties may not have held meetings in the fall and consequently did not provide an opportunity for the new doctors to join. Consequently, in the tabulation these men have not been counted against the established membership percentage.

A breakdown of figures shows the following:

Active Members (Life Members Included).....	2,381
Eligible Non-members	99
Ineligible Non-members	162
Not in Practice or Retired.....	138
New Doctors in County	100

The active member classification included 167 life members and some 450 for whom dues were waived. It showed a decrease of 20 from 1945 and of 100 from the total membership of 2,481 reached several years ago.

One Hundred Per Cent Counties

In spite of the decrease in over-all membership, it is gratifying to note that the number of counties with 100 per cent membership increased to 58. The membership percentage for the state as

a whole was 96, the same as in 1945.

Counties on the honor roll are as follows:

Adair	Lyon
Adams	Madison
Audubon	Mahaska
Benton	Marion
Boone	Marshall
Bremer	Mills
Buena Vista	Monona
Butler	Monroe
Calhoun	Montgomery
Cerro Gordo	Muscatine
Chickasaw	Osceola
Clarke	Page
Davis	Palo Alto
Des Moines	Pocahontas
Dickinson	Polk
Emmet	Poweshiek
Floyd	Sac
Greene	Scott
Hamilton	Shelby
Hardin	Sioux
Henry	Story
Howard	Tama
Humboldt	Taylor
Ida	Van Buren
Jackson	Washington
Kossuth	Wayne
Lee	Winneshiek
Louisa	Worth
Lucas	Wright

Number of One Hundred Per Cent Counties by Districts

First	5	Sixth	5
Second	6	Seventh	1
Third	7	Eighth	8
Fourth	4	Ninth	6
Fifth	6	Tenth	5
		Eleventh.....	5

Location of New Physicians

During 1946 the office received many calls from physicians being discharged from service about 10-

cations in Iowa. We maintained as complete an information file as possible and tried to do the best we could for every inquiry. There were many re-

1946 MEMBERSHIP RECORD

COUNTY	1946 Membership	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	New Doctors in County	Percentage of Eligible Physicians Who Are Members
Adair.....	10	....	....	....	....	100
Adams.....	7	....	....	....	....	100
Allamakee.....	8	5	....	1	2	62
Appanoose.....	14	2	....	1	2	87
Audubon.....	8	....	....	....	....	100
Benton.....	18	....	....	....	1	100
Black Hawk.....	71	5	6	2	3	93
Boone.....	21	....	1	....	....	100
Bremer.....	16	....	....	....	1	100
Buchanan.....	15	1	....	4	....	94
Buena Vista.....	18	....	....	....	2	100
Butler.....	12	....	....	....	....	100
Calhoun.....	18	....	....	1	3	100
Carroll.....	22	2	....	....	....	92
Cass.....	14	1	1	....	2	93
Cedar.....	10	3	....	....	2	77
Cerro Gordo.....	55	....	2	2	1	100
Cherokee.....	14	5	....	4	4	74
Chickasaw.....	12	....	....	....	2	100
Clarke.....	7	....	....	....	....	100
Clay.....	10	1	1	....	2	91
Clayton.....	17	3	....	3	....	85
Clinton.....	48	3	3	1	....	94
Crawford.....	11	2	1	....	3	85
Dallas Guthrie.....	38	2	1	1	....	95
Davis.....	10	....	....	....	3	100
Decatur.....	8	3	....	....	....	73
Delaware.....	10	4	....	2	....	77
Des Moines.....	35	....	1	2	....	100
Dickinson.....	11	....	....	....	....	100
Dubuque.....	69	4	1	3	6	95
Emmet.....	14	....	....	....	1	100
Fayette.....	26	4	....	4	....	87
Floyd.....	17	....	1	1	....	100
Franklin.....	10	1	....	1	1	91
Fremont.....	10	1	....	....	....	91
Greene.....	22	....	1	1	....	100
Grundy.....	11	1	....	....	1	92
Hamilton.....	17	....	....	2	1	100
Hancock- Winnebago.....	17	1	....	4	....	94
Hardin.....	22	....	1	4	....	100
Harrison.....	13	1	1	2	....	93
Henry.....	18	....	2	1	1	100
Howard.....	8	....	....	....	3	100
Humboldt.....	10	....	....	....	....	100
Ida.....	11	....	....	2	....	100
Iowa.....	13	2	....	2	1	87
Jackson.....	17	....	....	3	....	100
Jasper.....	17	3	....	1	3	85
Jefferson.....	16	1	....	1	....	94
Johnson.....	130	8	....	2	....	94
Jones.....	10	2	....	....	2	83
Keokuk.....	12	3	....	....	4	80
Kossuth.....	12	....	2	1	....	100
Lee.....	42	....	4	2	....	100
Linn.....	110	5	1	6	3	95
Louisa.....	8	....	....	2	....	100
Lucas.....	13	....	....	1	....	100
Tyon.....	5	....	....	1	2	100
Madison.....	7	....	....	....	....	100
Mahaska.....	22	....	1	2	2	100
Marion.....	23	....	1	18	....	100
Marshall.....	42	....	....	2	....	100
Mills.....	6	....	....	1	1	100
Mitchell.....	13	3	....	....	....	81
Monona.....	13	....	....	1	2	100
Monroe.....	12	....	....	2	....	100
Montgomery.....	17	....	....	1	2	100
Muscatine.....	24	....	2	....	....	100
O'Brien.....	16	2	....	1	5	89
Osceola.....	9	....	....	....	....	100
Page.....	25	....	1	5	4	100
Palo Alto.....	12	....	....	....	2	100
Plymouth.....	12	3	....	1	....	80
Pocahontas.....	11	....	1	1	....	100
Polk.....	270	....	8	....	....	100
Pottawattamie.....	64	3	2	2	6	95
Poweshiek.....	19	....	....	....	....	100
Ringgold.....	4	1	....	....	....	80
Sac.....	13	....	....	....	....	100
Scott.....	92	....	5	8	4	100
Shelby.....	8	....	....	2	....	100
Sioux.....	16	....	....	....	1	100
Story.....	35	....	....	....	3	100
Tama.....	19	....	....	3	....	100

COUNTY	1946 Membership	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	New Doctors in County	Percentage of Eligible Physicians Who Are Members
Taylor.....	5	....	....	....	1	100
Union.....	13	1	....	....	1	93
Van Buren.....	6	....	1	2	....	100
Wapello.....	39	2	2	2	2	95
Warren.....	8	1	....	1	1	89
Washington.....	21	....	....	1	1	100
Wayne.....	9	....	....	1	....	100
Wehster.....	49	1	1	....	....	98
Winneschick.....	16	....	....	1	....	100
Woodbury.....	118	3	4	3	....	97
Worth.....	6	....	....	....	....	100
Wright.....	19	....	2	3	....	100
Total.....	2,381	99	162	135	100	96

quests from different communities for a doctor, and in such instances we obtained as much information about the opening as we could and listed a contact man to whom we might send interested physicians.

Committee Activities

The Committee on Medical Service and Public Relations had a most active year in 1946, and naturally the secretary's office worked closely with the different committee members. Work on the veterans' program started in February; conferences were held with General Hawley in April; with Doctors Andreasen, Fitzsimmons, McCarthy of the St. Paul branch office during the year; and with representatives from Washington in November. The subcommittee appointed to formulate a fee schedule for this work held several meetings, and numerous schedules were typed, studied, changed and adjusted until the final one was completed in the fall. Report forms for the various examinations and treatments were studied carefully and compared so that when the Iowa plan began operating it might have as simple and workable a form as possible.

Other work of the committee involved meetings with farm groups, persons interested in improvement of the mental hospitals, and the heads of the vocational rehabilitation division and old age assistance program.

The expansion of Iowa Medical Service occupied a fair share of the time of the office, also. Efforts were made to enroll doctors in counties where coverage was to be offered, and help was provided in explaining the plan to interested lay groups.

Financial Report

All income of the Society passes through the Secretary's office. The by-laws confer upon him the responsibility for collecting the income due the Society and instruct him to turn it over to the treasurer for disbursement. This has been done, and the treasurer's report will show receipts and expenditures for the year.

John C. Parsons, Secretary

REPORT OF THE TREASURER

The report of the treasurer for the year 1946 is given below. In spite of the fact that dues were waived for a number of physicians still in service on January 1, the Society showed a net profit for the year due to increased revenue from other sources.

Expenditures of the Society are estimated in advance and set forth in a budget. In only a few instances were those budget figures exceeded and then because of circumstances unforeseen at the time the budget was made. The Society tries to live within its income and to expend its money as planned, but it is not inflexible, and when necessity dictates, the budget figure is exceeded.

Figures for the year are as follows:

INCOME	
Annual Session	\$ 4,432.50
Dues	18,572.50
Interest on bonds	992.50
Interest on savings	21.21
Journal	
Advertising	\$19,385.38
Reprints	994.82 20,380.20
Speakers Bureau Fees	388.00
Miscellaneous	36.24
<hr/>	
TOTAL INCOME.....	\$44,823.15
EXPENDITURES	
Administrative Miscellaneous	\$ 2,887.76
Annual Session	3,129.81
Council	204.87
County Society Services	27.66
General Salaries	6,313.65
Journal	
Salaries	\$ 4,230.25
Printing and Engraving....	13,671.93
Reprints	1,002.04 18,904.22
Legislative Committee	4,500.00
Medicolegal Committee	5.73
Medical Service and Public Relations.....	778.41
Other Committees	1,488.73
Rent and Office Supplies.....	1,988.83
Speakers Bureau	
Salaries	\$ 1,969.50
Travel Expense	305.02 2,274.52
Stationery and Printing	661.66
Trustees	220.50
<hr/>	
TOTAL EXPENDITURES.....	\$43,386.35
NET INCOME	\$ 1,436.80

Cash on hand at the first of the year in three bank accounts amounted to \$4,034.69. Bonds were held in the amount of \$44,500.00, making a total of \$48,534.69. Add to this the net income for 1946 of \$1,438.60, and the total funds on hand at the end of 1946 should be \$49,971.49.

Funds actually on hand at the close of 1946 were as follows:

Funds in Bankers Trust Co. Bank—	
Secretary's Account.....	\$ 988.97
Treasurer's Account	3,802.46
Savings Account	680.06 \$ 5,471.49
Treasury Bonds	39,500.00
U. S. Savings Bonds (Maturity Value	
\$4,000) Cost	3,000.00
U. S. Savings Bonds, Series G.....	2,000.00
<hr/>	
TOTAL CASH AND BONDS.....	\$49,971.49
James A. Downing, Treasurer	

REPORT OF THE BOARD OF TRUSTEES

The Board of Trustees held five meetings during 1946, with all members being present at each meeting. It also conducted a part of its work by mail and telephone when possible. The president and president-elect, secretary, treasurer and editor, and different committee chairmen were invited to attend these meetings, and the president, secretary, treasurer and editor were present at nearly all of them. This was beneficial in planning and carrying out the work of the Society.

Several problems arose during the year. One was office personnel. With the return to practice of many physicians, the Speakers Bureau work was expanded and Miss Alma Jensen was appointed full-time secretary. Mrs. Virginia Parsons was employed March 1 to take over the duties of receptionist and membership clerk which Miss Jensen had been handling along with part-time work of the Speakers Bureau. Mrs. Parsons was not unfamiliar with the office, having helped in the past during rush periods, and she has fitted in easily and well. Keeping the membership records requires absolute accuracy with attention to many small details, and Mrs. Parsons has shown an aptitude for it.

Mrs. Dorothy Dolk, who came to the Society in 1937, working first as receptionist, then as secretary of the Speakers Bureau, and finally as assistant to the editor, resigned July 1. Her familiarity with all phases of Society work and her acquaintance with many of the doctors made her place a hard one to fill. We were fortunate in being able to obtain Miss Viola Turner who came to us from teaching journalism in the Des Moines school system. Her training and experience have enabled her to serve capably as assistant editor.

Miss Alma Jensen, who began her work as receptionist in 1940, resigned October 15. Here again the loss of one who was very familiar with the work of the Society made replacement difficult, but we were fortunate again when Miss Marcia Coleman assumed the work as secretary of the Speakers Bureau November 11. Miss Coleman worked in Clinton before joining the WAVES where she served fourteen months.

Dr. George, appointed editor of the *Journal* at the beginning of 1946, worked closely with the Board on publication committee policies. An editorial board composed of specialists in various fields was appoint-

ed to share the work of preparing the editorial pages.

The Committee on Medical Service and Public Relations also worked closely with the trustees. The development of Iowa Medical Service and the formulation of the plan for home care of veterans absorbed a great deal of the time of the committee, and the trustees were kept fully informed of all developments. The committee tried to expand its public relations and was eager to work with various state groups along this line in 1946. An expanded program is planned for 1947.

Financially, the Society had a more profitable year than it had during the war years. Income from the annual session and from *Journal* advertising showed a net profit, so that, in spite of decreased dues, the net income for the year was \$1,438.60. The treasurer's report gives a detailed statement of income and expense.

It is difficult at this time to foresee what 1948 will bring. Advertising revenue remains high for 1947, but it is possible it will be less in 1948. Space for the annual meeting for 1947 has all been sold, with the demand larger than the supply. What the picture will be in 1948 we cannot tell. We know the need for an aggressive stand by the medical profession on economic matters will not lessen. We know public relations will still be important and that much work must be done along this line. We feel the Speakers Bureau work must be expanded; that Iowa Medical Service must be kept on a sound basis; and that the veterans' program is a necessity. We feel, also, that the committee members who are working actively on these projects should keep in touch with national efforts. This means travel expense to attend meetings at which mutual problems are discussed.

The science of medicine has never lagged. The war necessarily curtailed educational programs for the lay public, but these must be reactivated. The problem of distributing medical care more evenly and on a budgeted cost basis went ahead rapidly during the war, and it must continue to do so. We cannot rest on our oars; we must advance with the times. For that reason, we recommend that the dues for 1948 be \$15.00, which should cover running expenses and allow for an expansion of the necessary economic features of medical care.

In closing, may we say that as trustees of the State Society we are responsible for the funds of the Society. That responsibility, however, entails far more than the mere expenditure of money; it entails a study of the channels of expenditure and a recommendation for utilization of the ones which will bring the greatest benefit to the medical profession and the public. As trustees we have tried to keep in touch with the work of the different committees and officers and to encourage and support them. Because of that phase of our work, our report is philosophic in part and not confined entirely to a financial statement.

John I. Marker, Chairman
Lee R. Woodward
Walter A. Sternberg

REPORT OF THE FIRST COUNCILOR DISTRICT

The return of physicians from service is about complete in our district, and this will soon enable us to carry out the usual activities in the several counties. Many of the returning doctors have taken refresher courses, and they are now very busy getting settled in their various practices. The old guard who carried on during their absence extends to them a wholehearted welcome. In many instances it has been about as hard on the ones at home as on those serving in the armed forces. We had some casualties too.

The clinics for crippled children have been well conducted and well attended in the district; they will be continued through 1947. Societies have been combining to hold county meetings, and some good scientific programs have been presented. To my knowledge there are four counties contemplating hospital construction.

Due to the number of doctors in service, it has been very hard to get cooperation on Iowa Medical Service, but I am sure this will be adjusted in the very near future. A meeting in our district was held recently with Blue Cross workers and much useful information concerning the hospital and medical service plans was presented. With time we will get the required results.

Summing up medical conditions in the First District, I firmly believe a new era is about to unfold that will be of equal service both to doctors and their patients. The dangers of socialized medicine can be averted, I feel, depending on how well the doctors get behind the Iowa Medical Service Plan.

L. L. Carr, Councilor

REPORT OF THE SECOND COUNCILOR DISTRICT

Organized medicine in the Second District is nearly normal. The return of physicians from service has done much to lighten the load of the older men, which was duly appreciated.

The various counties have undertaken immunization programs and have held meetings, some monthly and some not so often. Three counties plan to build and equip hospitals. Humboldt and Hancock voted for county hospitals; Kossuth voted against a county hospital but is to build one partially by means of popular donations and partially through the Sisters of Mercy. Iowa Medical Service has been backed by a great majority of physicians.

I wish to take this opportunity to thank the various deputy councilors of this district for their assistance during the past year, and I hope we may make the Second District a "bigger and better" district during the coming year.

C. H. Cretzmeyer, Councilor

Butler County—The Society had a meeting once each month during the past year. A tuberculosis program was presented, but no immunization program. Two men have returned to the county from service—Floyd Rolfs of Parkersburg and Bruce

Anderson of Greene. Dr. Day of Clarksville died early in January, 1947.

All members of the Society have signed up in Iowa Medical Service. The Women's Auxiliary has held meetings monthly at the same time as the Society.

Bruce Ensley, Deputy Councilor

Hancock County—The Society has been inactive because of poor attendance at meetings, but the election of officers will be held soon. Two men returned from service recently—Dr. Irish of Forest City and Dr. Eller of Kanawha.

An immunization program was held at Klemme. The doctors in the county are signed up in Iowa Medical Service and it is active, having a county unit organization with a large number of subscribers. We think it is working out quite satisfactorily.

Hancock county voted a \$100,000 bond issue for a 45 bed hospital to be located at Britt.

C. V. Hamilton, Deputy Councilor

Humboldt County—All of the doctors from Humboldt county who were in military service are now back in private practice. Dr. Asa Arent returned to Humboldt in December, 1945; Dr. Herrick re-opened his Gilmore City office in January, 1946; and Dr. Coddington resumed his practice in Humboldt last August.

The voters of Humboldt county authorized a \$100,000 bond issue for a county memorial hospital. A board of trustees has been appointed and will soon start a campaign to raise additional funds for the project.

The county Farm Bureau is emphasizing a health program this year and, in that connection, is promoting Blue Cross hospital insurance and Iowa Medical Service. Over 1,300 families in the county are eligible for the service. Fifty per cent of the physicians in the county have enrolled in Iowa Medical Service.

In addition to stressing immunizations in private practice, seven school immunization projects were held in the county and a total of 667 were protected.

Ivan T. Schultz, Deputy Councilor

Kossuth County—Without doubt the Kossuth County Medical Society has passed through the most eventful year in its history. Through the help of the people of the county and the efforts of our own Society, we obtained the promise of a \$400,000 Mercy hospital to be built in Algona within a year or two. A great deal of credit for this is due to Dr. Cretz-meyer who made a special trip to Detroit to interview the Sisters of the order and obtain their promise of support, and to Mr. L. E. Linnan who campaigned for the local funds successfully.

During 1946 Dr. John Kenefick returned to his practice in Algona and Dr. R. W. Williams to Lakota. Dr. Dean Clapsaddle returned from service but located in Clear Lake. One big event of the year was the celebration honoring Dr. Pierre Sartor for his fifty years in practice.

The Society is planning to hold a postgraduate course in the spring of 1947 to which it will invite

doctors from adjoining counties. We look forward to a most progressive year.

J. G. Clapsaddle, Deputy Councilor

Worth County—As an organization we were inactive during the past year, but individually we had a busy year. Dr. G. S. Westly of Manly returned to his practice following service. There were no deaths and no additions to the membership. Immunization programs for smallpox and diphtheria, and a case-finding program for tuberculosis were conducted. Little was done about Iowa Medical Service, but considerable preliminary work was done on Blue Cross in farm groups. The Society had no scientific programs of its own, but members attended many meetings of the Cerro Gordo Society.

S. S. Westley, Deputy Councilor

Wright County—The Wright County Medical Society was fortunate in having three physicians return from service—Dr. Gorrell and Dr. Bird to Clarion, and Dr. Leinbach to Belmond. Three new physicians returning from service located in the county—Dr. E. M. Smith and Dr. M. J. Schaeferle at Eagle Grove and Dr. G. J. Hruska at Belmond. Two doctors moved away during the year.

Our immunization program has been continued for ten years, with the State Department of Health, the county medical society, the county superintendent of schools, superintendents of schools, the rural teachers, school nurses, county nurse, and parents all cooperating. No diphtheria, smallpox, whooping cough, typhoid or measles have been reported in the county, although there were several cases of poliomyelitis.

Two county meetings were held during the year. A bond issue of \$50,000 for a city hospital was voted. A tuberculosis program was given in Eagle Grove, Clarion, Dows and Belmond with 1,460 persons being filmed.

Coverage in Iowa Medical Service is being sold through the Health Improvement Association. Most of the doctors are participating in the plan.

J. H. Sams, Deputy Councilor

REPORT OF THE THIRD COUNCILOR DISTRICT

With the return of a great majority of men from service, the various counties of this district are beginning to get back to normal and the societies are taking on new life. All counties in the district have had one or more meetings during the year and are fully organized. With the return of physicians from service, some of the older men have retired, among them Dr. Birney of Estherville and Dr. West of Armstrong. The personnel of the deputy councilors had only one change, Dr. S. H. Cook of Rock Rapids replacing Dr. DeYoung who moved to Arizona.

Many of the counties have 100 per cent enrollment in Iowa Medical Service, and others will have by the end of 1947, I am sure. Immunization and tuberculosis case-finding programs have been conducted. The order of "Sisters of Sorrowful Mothers" took

over the old Coleman hospital in Estherville, added a new wing and additional floor, thus making it one of the most capacious and best equipped institutions to be found in a town of 6,000 persons in Iowa.

All in all, things are running smoothly in this district. I want publicly to thank the officers of the county societies and the deputy councilors for their fine cooperation afforded me during the year just passed.

J. B. Knipe, Councilor

REPORT OF THE FOURTH COUNCILOR DISTRICT

The end of the war has brought beneficent changes to the Fourth District. In each county there have been returned veterans and new physicians to help relieve the medical load. It is particularly gratifying to note that younger men are returning to the smaller towns where certainly they are needed. Perhaps due to the enthusiasm of these men, concrete plans for hospital construction or expansion are being made in almost every county in the district. Deputy councilors almost without exception in their reports make note of the good medical feeling in their communities, and hospital development will certainly continue and stimulate this era of good feeling to the benefit of medical organization. At present each local society is active and progressive, although the number of meetings of the various groups varies considerably.

Probably because of lack of expansion to the more rural-county level, neither the Iowa Service plan nor the Veterans Administration plan for home care has touched many men in this district. In Sioux City the Veterans Administration is quite active and the men are watching with interest its development. There is some resentment toward the paper work and inflexibility of the plan. The Speakers Bureau presented a postgraduate course in Carroll county but there seems to be little interest in Speakers Bureau activities in this district. Likewise, to date the various public health programs have not acquired the momentum which they lost during the war.

R. N. Larimer, Councilor

REPORT OF THE FIFTH COUNCILOR DISTRICT

Reports of the activities of this district show that most of the county societies have returned to normal. Again the meetings are in progress and are well attended, showing that both the old and the new members are interested in better medicine. Some of the county societies have gone together to have postgraduate courses by the Speakers Bureau.

There is general enthusiasm throughout this district for the construction of new and the enlargement of old hospitals, because there is a decided bed shortage everywhere. In many places patients must go on a waiting list before getting into the hospital. There is definite need for better care of the aged. Our hospitals have a number of cases who really need no medical care yet must be cared for in an institution. If there were more and better homes

for these people, many rooms could be released for the care of the sick who should be hospitalized.

There is still need for physicians in the smaller towns, but very few returning from the armed services desire to locate anywhere but in cities where hospital facilities are available.

The Iowa Medical Service Plan is receiving the approval of most of the physicians as the payments have been extremely satisfactory and quite prompt. People in general are taking an interest in this plan.

E. F. Beeh, Councilor

REPORT OF THE SIXTH COUNCILOR DISTRICT

In our district, affairs in organized medicine have taken an upward swing since the close of the war. Three counties have twelve meetings each year, two counties have six meetings, one county has nine meetings and three counties meet once a year to elect officers. The last three counties referred to meet with larger groups of scientific gatherings in adjacent territory.

Seven counties have very active immunization and vaccination programs in the schools nearly every year. One or two counties put on this program every two or three years. Tuberculosis testing programs have been observed in all of the counties of the district. Two or three counties have just completed testing in the schools, and miniature X-ray films were taken. All of the counties except one or possibly two, cooperate in examinations of the 4-H boys and girls.

A contract between the board of supervisors and the county medical society for the care of the indigent exists in practically all of the counties.

From every source of inquiry, we hear that Blue Cross hospital insurance, being promoted largely through the Iowa Farm Bureau, is going over in a large way. The companion plan is one for medical care and is known as Iowa Medical Service. It is the Iowa State Medical Society's plan for prepayment of medical care. Let us all get behind this thing and put it over. It merits the active support of every member of our organization.

The cancer educational program is undergoing a wide expansion. It has the backing not only of the medical profession but of some of the best business men of our state. Our district should take on renewed energy in the promotion of this very vital activity.

An opportunity for and an obligation of the doctors of the state has arisen in the medical care of returned veterans. We are indeed fortunate that our government has opened up the way for our members to lend their support to this patriotic service. It is to be hoped that all of our active practitioners will sign up in the interest of medical care of the veterans.

We are much indebted to the deputy councilors and county officers of the district for their close observance of medical matters, and for their assistance in their respective counties.

James C. Hill, Councilor

REPORT OF THE SEVENTH COUNCILOR DISTRICT

The activities in the Seventh District have been very much the same as in previous years. Most of the men who were in service have returned to their former locations and resumed their practices.

Inoculation for preventable diseases have been carried out in all localities. The medical service plan has been accepted by the county medical societies in all except one county. There has been much enthusiasm shown for the construction of additional hospital facilities in our district, with some new projects voted and many additions to be made to those already built.

H. A. Housholder, Councilor

REPORT OF THE EIGHTH COUNCILOR DISTRICT

From the reports here submitted by deputy councilors, it is evident that the medical profession of southeastern Iowa is wide awake. Bonds for a new county hospital have been voted in Van Buren county, and bonds for additions to the present hospitals have been voted in Jefferson and Henry counties. Washington county completed an addition three or four years ago; Muscatine county is in the throes of campaigning for a new hospital; Scott county desperately needs a hospital for mental diseases.

All hospitals in the district are crowded all of the time, much of the space being taken up by aged persons who are not hospital cases in many instances. There is a desperate need for more homes for the elderly, considering that about 10 per cent of the inhabitants of the Eighth District are above 65 years of age, and that at least one-third of those are dependent financially or physically upon others for help or care.

C. A. Boice, Councilor

Des Moines County—All of the men who were in service have returned to practice. In addition we have three new physicians—Dr. Mark C. Wheelock, Dr. Robert D. Rowley and Dr. Roy A. Hulse, all located in Burlington. Nine meetings were held during 1946 with excellent speakers and a good attendance. We plan to sponsor a postgraduate course in the fall of 1947 and will be hosts to the Mississippi Valley Medical Society also.

F. G. Ober, Deputy Councilor

Louisa County—Two physicians who were in service returned to practice during 1946, making a total membership of six. Ten regular meetings were held.

J. H. Chittum, Deputy Councilor

Muscatine County—Muscatine county gained four new doctors during 1946—Dr. R. W. Asthalter, Dr. D. C. Altfine, Dr. L. C. Hallendorf, and Dr. William Catalona. There was more society activity than in former years. At present there is a campaign on foot to erect one large hospital of 125 or 150 beds, to abandon Bellevue hospital and to use Hershey hospital as a convalescent and contagious disease hospital. Many old persons requiring long hospitali-

zation now occupy beds we need for short time medical and surgical cases.

T. F. Beveridge, Deputy Councilor

Jefferson County—Our county medical society has held quarterly meetings the past year, some, however, being poorly attended. Two of our men have returned from service, Dr. Gittler and Dr. Castell. All men are participating members of the medical service plan with dues paid. We have felt that the regular state medical fees should be revised.

Ira Nelson Crow, Deputy Councilor

Scott County—The war is over and the doctors have returned to their practices again. Our progress for the past year has been like many other years. We held ten regular meetings, using mostly local talent for our programs because of the difficulty of travel. We have fared very well because the returning veterans have given us their experiences in the army, and we have found that scattering a little local talent through the programs adds interest.

We have been busy forming a new staff at Mercy Hospital and hope to have it a Class A hospital by July 1. Our newly built isolation hospital has been a great success this year. We have received patients from far and wide into this hospital because the treatments for poliomyelitis and other contagious diseases are pursued vigorously. The tuberculosis hospital under the care of Dr. Evans is full to the doors, many veterans being brought here for care. Our great concern now is the care of the insane, so much discussed throughout the state. We have no facilities locally for mental care, but we hope to work out something along this line in the future. All in all, we have had a very successful year in the medical profession and we keep on with our eyes forward, looking toward the light.

A. P. Donohoe, Deputy Councilor

Van Buren County—The activities of the Van Buren County Medical Society have been very few during the past year. We held one meeting during the year, attended by two members. Because of illness, the other doctors could not participate.

L. A. Coffin, Deputy Councilor

Lee County—During 1946 our county society had four meetings, two at Fort Madison and two at Keokuk. About 90 per cent of the members attended. All of our men in service have now returned to their practices, and we have admitted two new members. We have not been active in public health programs, but hope to do something on the cancer program in 1947. Additional doctors are needed to help carry the medical load in the county.

G. H. Ashline, Deputy Councilor

Washington County—Ten meetings are held each year in Washington county. The programs in 1946 were interesting and the meetings well attended. In June the society honored Dr. Lease and Dr. McLaughlin for their fifty years' practice; in October the annual turkey dinner was held. Cooperation in the society is very good.

Doctors Mast, Montgomery, Allison, Sattler, and

J. R. Miller returned from service to take up practice in the county, and Dr. McCreedy returned from Ames where he had been during the war.

E. D. Miller, Deputy Councilor

REPORT OF THE NINTH COUNCILOR DISTRICT

Activities have been carried on about as usual in the Ninth District with most counties holding their regular meetings and participating in some form in the immunization and tuberculosis testing programs. Most counties have several of their physicians returned from service. Wapello county is to be commended on the excellent history of the county which was published in the Journal and of which a copy in book form has been sent to the Councilor. Dr. C. A. Henry deserves credit for much of this work.

Last but not least, the district was honored by having Dr. H. A. Spilman of Ottumwa chosen as president-elect of the State Society.

R. C. Gutch, Councilor

REPORT OF THE TENTH COUNCILOR DISTRICT

The tempo of medicine in its broadest sense has been greatly accelerated in the past year. The need for hospitalization has been realized, and bonds

have been voted for the erection of three county hospitals. Funds for erection of a hospital at Corning have been acquired by bequeathment; this will care adequately for Adams county. Those counties lacking hospitals are contemplating voting bonds in the near future.

The need for physicians in this rural district has been met fairly well by the return of veteran physicians plus location of several recent medical graduates in the district. Decatur and Taylor counties report very satisfactory scientific meetings. A post-graduate course is being discussed for 1947.

A meeting of Blue Cross and Iowa Medical Service is to be held in Creston January 29, and it is hoped we will be able to enroll the physicians of the district at or near 100 per cent.

J. G. Macrae, Councilor

REPORT OF THE ELEVENTH COUNCILOR DISTRICT

The doctors who were in service have nearly all returned and are adjusting to the present abnormal conditions of practice. We are all against government control of medical practice and realize or believe the boring in of various federal and state agencies will result in government control of practice in a few years if not stopped.

W. S. Reiley, Councilor

Reports of Standing Committees

REPORT OF THE COMMITTEE ON LEGISLATION

The main work of the Legislative Committee during the year when the Legislature is not in session concerns study and preparation of bills to be presented during the following session. The Iowa State Medical Society has no legislation of its own to present, but naturally there are bills proposed by other agencies which affect health and merit our support.

The committee held several meetings with representatives of the Iowa Tuberculosis Association and the Tuberculosis Committee of the State Society in regard to a bill providing for free hospitalization of tuberculous persons. At the present time some counties give free hospitalization while others check the financial status of the person and if he has resources, charge him for his care. In some instances this has worked a great hardship upon a worthy individual who might own his home but lose it through prolonged hospitalization. The committee felt strongly that if free hospitalization is to be provided, there should be some method of forcing the individual to remain until he is no longer a health hazard to other persons, something which has not been true in the past. The bill as finally drawn gives more leeway to the individual who possesses some financial resources, and also provides that the patient will sign an agreement to remain hospitalized until discharged.

The committee also discussed revision of the workmen's compensation law with representatives of the Iowa Hospital Association. The hospitals wish the present limit of \$600 for medical and hospital expense removed.

The Iowa State Nurses Association asked our help in preparing a bill for licensure of practical nurses and more accurate defining of the duties of registered and graduate nurses, and this was given to them.

The State Department of Health has two bills of major importance with which it asked our help. One is to eliminate the township boards of health and establish in their place county boards of health. This bill is similar to one presented two years ago, but your committee hopes it has removed some of the objectionable features of the previous bill and made it one which should receive favorable attention from the legislature.

The second bill of the State Department of Health is for licensure of hospitals so that the state may benefit from the Hill-Burton bill. Counsel for the legislative committee has studied this bill and given his advice about it.

Mary L. McCord, Executive Secretary

REPORT OF THE COMMITTEE ON MEDICAL SERVICE AND PUBLIC RELATIONS

Trends of events during the past few years have indicated that far reaching changes are impending

for the future conduct of the practice of medicine. This threatened transformation has been brought about partly because of public demand and also as a result of the tremendous social upheaval through which we are passing which will be felt by everyone, even to the most solitary physician in the most isolated communities of our nation. It is not for us to refuse to accept these inevitable changes, but rather, we must do our utmost at this time to direct their course so that they will best serve to maintain America's present high standard of medical care.

Participation in public and political affairs has never been the desire of most medical men, but today we are facing a situation of necessity, not of choice, which is forcing us to engage more actively in such practices. We must begin at home by practicing good medicine, giving adequate service, actively engaging in health programs, even the political activities of our respective communities, and must continue to cultivate those fine public relations which we have enjoyed so much in the past. This committee is prepared to help you with these responsibilities whenever and however possible, and a page is now appearing under News Notes in the Journal of the Iowa State Medical Society which is designed to keep you informed on current news along the lines of medical service, economics and public relations.

While it is true that our best efforts can be achieved at home, no one can deny that isolation is a thing of the past. We distinctly need better public relations among our physicians in the county, the state, and the nation as well as between our medical societies and the public as a whole. Our national leaders are fully aware of this necessity and are doing everything in their power to improve our standing, particularly with the public. They are sponsoring national meetings with farmers, labor, industry, veterans and many other groups, and the atmosphere at these meetings testifies eloquently to their value. Anyone who has had an opportunity to observe and study our present predicament cannot help but be concerned with the necessity for an immediate energetic organized effort on our part to improve our general relations if we are to avert some of the undesirable situations which are about to be forced upon us.

It is conceded that the majority of American physicians have no desire to see the people adopt socialized medicine, but such legislation will come to pass unless we can convince the public that we have something better to offer. Three years ago you voted to adopt a medical service plan for Iowa physicians as a part of a national movement designed to prove that we had a far better proposition to offer the people than the schemes proposed by the advocates of socialized medicine; since then we have had time to prove our contention. Dr. Olsen and his associates have worked hard to execute this plan and put it into operation.

Some of our members have felt that the benefits offered by this insurance are discriminatory against certain individuals and groups. The first requirement in drawing up such a project is to make sure that it

is financially sound, particularly during its early years before sufficient experience has been accumulated to venture with more liberal terms. A broader coverage, although highly desirable, could lead to near catastrophes such as have been experienced by similar plans during their formative years. On the other hand, it has been amply demonstrated that after a few years of the successful operation of such plans, many of the undesirable features can be superseded by more liberal terms. Nevertheless, the fact still remains that this is our answer to those who desire socialized medicine; it remains our own child; and we can let it perish for lack of support or help it survive at our own discretion.

During the past years organized medicine has advocated that veterans with service-connected disabilities should be entitled to receive care at home by physicians of their choice who should have a voice in establishing what their compensation should be, and last year you voted to accept such an offer by the Veterans Administration. Dr. Gutch and his committee have worked hard to get the plan and terms into operation. The paper work has been reduced to a minimum, yet it is reasonable to predict that some of our members will not participate because they do not choose to do so, which is their privilege. Also some men may find themselves unqualified to meet the requirements of the Administration for making these examinations and filling out the reports, and we can anticipate some unfavorable criticism from them. We asked for it, however, and now it is up to us to show that we can do the job. Dr. Gutch's committee together with Dr. Olsen's have been the most overworked during the year.

The passage by Congress last fall of the Hill-Burton Bill for hospital construction benefits, the shortage of rural physicians, medical care of itinerant nonresident farm help and other medical problems of the farmer have put Dr. Shaw's committee on the priority list for the coming year. They will need your assistance in your respective communities and will welcome your advice and constructive criticism for the solution of these problems, which are definitely the concern of every rural physician.

In these times doctors must watch with some concern the gyrations of national legislation in medical matters which have been negotiating some precarious turns during the past years. We have no one in our society who is better experienced and more qualified to observe and advise us on these matters than Dr. Bernard because of his previous membership and work on our legislative committees. We sincerely hope that you will read his comments as they will appear from time to time in our News Notes.

Old age sick benefits are a perennial problem with this committee. Dr. Maxwell with the cooperation of Dr. Channing Smith has tried hard to remedy the present unsatisfactory and inefficient system of allotting these funds. There seems to be little hope of much improvement until the federal government chooses to change the ruling that all benefits must

be paid directly to the old age recipient. Furthermore, statutes which prohibit the payment of funds to a pensioner after his death, even though the debts were incurred during his life, also add to the difficulty in effective administration. It is hoped that the situation may be improved by decentralization of the system. Whether this is possible at this time or not still remains to be seen.

Dr. Conzett has recently been appointed to the Committee on Institutions under the Board of Control. Most of these problems are now in the State Legislature for consideration, and Dr. Conzett has not had sufficient time since his appointment to become acquainted with the situation or make any definite recommendations.

The lack of general practitioners throughout the country, labor demands and attitudes toward medical practice, public health trends and agitation for industrial hygienic measures are among a few of the problems facing this committee in the near future. To date there has not been any intensified national movement for the solution of these challenges, perhaps because our leaders have been too thoroughly occupied with more pressing matters. Nevertheless, the nature of these questions suggests that this committee will have plenty to do in the near future when such movements get under way.

Let us hope that during the coming years this committee will have the fortune to maintain its present high caliber of members, for they have done an excellent job. Because of their assignments, some have had to do more than others, but all have done their utmost, and willingly. For their efforts on our behalf we owe them a sincere debt of gratitude.

Fred Sternagel, Chairman

The Medical Service Plan

After being in full operation for a period of eighteen months, the results attained by Iowa Medical Service are not too impressive. In the enrollment of new members, we have not kept pace with medical plans the country over generally. Two factors have contributed to our tardy progress. The first has been the failure of physicians to sign up in sufficient numbers in certain important territories to warrant enrolling groups. The second and equally important factor is the fact that our two hospital plans have, during the past year, been engrossed with making effective a higher premium rate for their membership and have thus lacked the time and personnel to promote effectively the sales for Iowa Medical Service. This latter problem is on the way to being solved at an early date and enrollment should soon proceed at an increasing tempo.

Since the first of 1947, participation in the plan has been thrown open to physicians without payment of the \$25 initial fee. This has resulted in a substantial increase in the number of participating physicians, bringing the total as of this date to 1,200, approximately 50 per cent of all doctors of medicine in the state. Three hundred twenty physicians have been added during the past month.

While 52 counties in the state have 50 per cent or more of all physicians cooperating in the plan—a percentage deemed the minimum for successful functioning—some of the more populous centers with many and large Blue Cross groups are unavailable to us because of the limited number of physicians enrolled. Some means must be found to arouse physicians in these localities to the need for this method of budgeting for medical care on the part of their patients. It is an economic force which must be recognized and met.

As of Jan. 31, 1947, we have 139 groups enrolled, with 8,533 certificates outstanding, and with approximately 18,000 lives covered.

The claim experience has been very satisfactory to date. Approximately \$40,000 has been paid in doctors' fees out of a total premium income of \$120,000. By and large the physicians of the state have been most cooperative in reporting fully on their services and in meeting the fees as set out in the schedule. A minimum of complaints has been registered as to the adequacy of surgical or medical fees allowed.

The range of surgical procedures done so far has been wide, and as a result valuable experience has been gained for future revision and extension of our schedule of fees.

Since about February 1 Iowa Medical Service has functioned as fiscal agent for the Iowa State Medical Society in the veterans' program. Under this procedure we secure doctors for the necessary examinations and treatment of disabled veterans. Much thought and preliminary work has been given to the development of simplified and suitable forms for the use of physicians and for the maintenance of office records. The burden of this has fallen largely on the State Medical Society's efficient executive secretary.

The work has obviously been increased greatly by the veterans' program and has called for a corresponding increase in our office force. Since the beginning of our organization, Mr. E. M. Kingery, executive secretary of the Polk County Medical Society, has served us ably as executive director on a part time basis. It has been apparent for some time, however, that the duties of the two organizations were too exacting and numerous for any one person to perform. The local county society has a prior right to Mr. Kingery's services, and consequently he will resume work there on a full-time basis.

The problems of Iowa Medical Service have meanwhile grown to a point where a full time executive is required. After considerable search we have finally secured the services of Wilbur Quinn, a recently returned veteran, who by training and experience should fully meet all of our requirements. Mr. Quinn is here and ready to take over at once.

We look forward to greatly expanded activities in 1947, both on the medical service plan and on the veterans' program.

Martin I. Olsen

Rural Health

Most of this year has been spent preparing for active work. Plans are being laid for a conference on rural health in cooperation with the Farm Bureau and other organizations. As soon as the final report of the hospital survey is available, this will be used as a basis for working with the various counties in developing their hospital and health center plans.

Hospital service has been made available in several counties through health improvement associations under the direction of the Farm Bureau. Iowa Medical Service has been offered to rural groups in four counties, and this service is to be extended as rapidly as possible.

Two members of the committee attended the National Rural Health Conference in Chicago February 7 and 8. At the conclusion of this conference further plans were made. These will be more definitely reported in a supplementary report at the time of the annual meeting of the House of Delegates.

Ernest E. Shaw

Old Age Assistance and Blind Assistance

Your committee has consulted frequently with Dr. Channing Smith, Medical Advisor to the State Department of Social Welfare. At present approximately \$1,000,000 per year is granted to 20,000 old age pensioners for chronic illness on the basis of doctors' estimates of their probable needs. It is estimated that too small a proportion of this money is actually spent for medical care. We hope that plans may be worked out for postpayment on the basis of actual needs.

The blind assistance has been decentralized and is now administered on a county level.

Charles T. Maxwell

National Legislation

Your committee's activities at the national level have been curtailed by two factors: the fact that the Wagner-Murray-Dingell bill died in committee with the adjournment of Congress; and the incomplete reorganization of the American Medical Association following the Rich report at the San Francisco meeting in July.

Although we were prepared to do so, we were not called upon to appear at the hearings on the Wagner bill.

First steps in the reorganization of the American Medical Association led to the elevation of Dr. Olin West to the presidency. This was a much deserved promotion and recognition of his excellent leadership of the profession. It also made possible the selection of a younger man, Dr. George F. Lull, as secretary and general manager. Doctor Lull is eminently qualified to streamline the organization to meet the modern trend of economic medicine. The creation of a department of public relations under the direction of Mr. Charles Swart highlights the reorganization, and we welcome the opportunity to work under his direction. A national organization, Associated Medical Care Plans, has also been cre-

ated by the Council on Medical Service. It will offer assistance to medical plans now organized and furnish, eventually, trained personnel to new organizations.

We have kept in close touch with the National Physicians Committee. It is still a problem child but should be given full credit for doing a good job which the trustees of the American Medical Association were not prepared to undertake. However, we sincerely hope the new department on public relations will take over its work and thus eliminate the constant criticism of its basic organization.

As chairman of this subcommittee, I attended three unofficial meetings, the North Central Conference in St. Paul in November, the Conference of Presidents (two meetings) and the National Conference on Medical Service. Medical cooperatives were the subject of special attention at all of these conferences. A summary of the discussions will be published in our Journal under the News Notes from this committee.

American medicine under the Congressional leadership of Senator Taft now has the responsibility of developing an advanced, practical and workable national health program which should eliminate the threat of a new Wagner plan or national cooperative health plan.

Our chairman, Dr. Fred Sternagel, recently said that "public relations must necessarily start with professional relations." Professional relations in this instance mean that every doctor must give wholehearted support to the effort to work out a national health plan which will provide better distribution of medical care to all the people.

R. D. Bernard

Home Care for Veterans

After various communications with the central office of the Veterans Administration relative to a new fee schedule and simplification of forms, we were informed in February, 1946 that we might submit a fee schedule for consideration. This information was conveyed to the Committee on Medical Service and Public Relations and that committee approved the idea and appointed two more members to the subcommittee. They were Dr. E. M. Honke of Sioux City and Dr. J. S. McQuiston of Cedar Rapids. Both men accepted the appointment and assisted ably with the work.

The entire Committee on Medical Service and Public Relations met with the subcommittee on April 7 to discuss the program. It was felt that the fee schedule already prepared by Woodbury county might be the basis for the State fee schedule. It was decided, too, that Iowa Medical Service should act as fiscal agent for the State Society in making and servicing such a contract.

The subcommittee met and drew up a fee schedule which it had mimeographed and distributed to members of the House of Delegates April 17. A resolution was also presented to the House of Delegates that same night asking for authority to negotiate a contract with the Veterans Administration and ask-

ing that Iowa Medical Service be authorized to act as fiscal agent. The motion was unanimously approved by the House of Delegates.

The subcommittee called a meeting the afternoon of April 18 to which were invited Major General Hawley and Dr. Einar C. Andreassen of the Veterans Administration, and all delegates and members of the State Society. A good number were present. Dr. Hawley and Dr. Andreassen very kindly answered all questions. Dr. Hawley stated he thought our fee schedule fair and equitable and intimated it would probably be in effect by June or July, 1946.

Nothing more was heard from the Veterans Administration until the last of June, at which time we were advised by Dr. Harding from the central office that we should submit another fee schedule in two parts, only Part I, examinations, being available at that time. He also suggested that we adopt the Kansas plan and abandon our Iowa Medical Service plan. While this did not meet with the approval of the subcommittee, we were willing to negotiate, trying for the best contract possible with them. We filled out Part I and submitted it. After much correspondence we were advised that any agreement negotiated with Dr. Andreassen at the regional office would be acceptable to the Veterans Administration. We then contacted Dr. Andreassen, requesting him to set a time and place where we could meet with him and negotiate an acceptable contract.

On August 28 your chairman, Dr. Olsen of Iowa Medical Service, and other members of Iowa Medical Service and the Committee on Medical Service and Public Relations met with Dr. Andreassen and Dr. Fitzsimmons of the regional office and Dr. Patterson of the Des Moines office. All items were approved by Dr. Andreassen. We again requested that Iowa Medical Service be the fiscal agent to negotiate and administer the contract. This was accepted by Dr. Andreassen.

We also asked for permission to use simplified examination forms, similar to those being used in Michigan, and this request was also granted by Dr. Andreassen.

On September 5 the Executive Council of the State Society was called to discuss the whole matter of the contract with the Veterans Administration. Each member was asked to give his opinion after listening to the explanation by the committee, and the resulting vote again approved and supported the committee and the president in what had been done to date on the contract. The Council also reaffirmed its wish that Iowa Medical Service act as fiscal agent and carry on with Part I of the contract.

At the North Central conference in St. Paul November 1, a brief conference was held with Dr. Williams from the Washington office of the Veterans Administration, and Doctors Fitzsimmons and McCarthy of the regional office. We were again assured that Part I of our contract would very soon be in force. As you know from the Journal and from bulletins, most of Part I is effective as of Feb. 1, 1947. As for Part II, anybody's guess is good as to when it will be activated.

In conclusion we wish to thank the representatives of the Veterans Administration and members of the Iowa State Medical Society who assisted with this work.

R. C. Gutch

REPORT OF THE COMMITTEE ON NECROLOGY

Fifty-three members of the Iowa State Medical Society died in 1946, the youngest being thirty-four years of age and the oldest eighty-six. Three of them lost their lives in service: Ralph W. Snodgrass of Des Moines who was drowned by enemy action in the south Pacific; Carl B. Hall of Dubuque and William D. Yavorsky of Cedar Rapids who died while still in service.

Will the House of Delegates please stand for a moment in memoriam while the secretary reads the names of our comrades who are no longer with us.

Name	Town	Age
August R. Anneberg.....	Carroll	65
Thomas Arnold.....	Primghar	66
John W. Bailey.....	Des Moines	63
Edward F. Besser.....	Newton	71
James A. Bisgard.....	Harlan	77
Benjamin F. Campbell.....	Burlington	72
Lewis W. F. Carpenter.....	Reasnor	78
Oliver T. Clark.....	Keokuk	63
Frank H. Conner.....	Nevada	79
Rudolph J. Eischeid.....	Dubuque	63
Gustave A. Everson.....	Rolfe	61
Leslie K. Fenlon.....	Clinton	53
Frank M. Fuller.....	Keokuk	78
James S. Gaumer.....	Fairfield	74
Derk J. Gleysteen.....	Alton	65
Cecil C. Grant.....	Cedar Falls	58
Howard D. Gray.....	Des Moines	70
Carl B. Hall.....	Dubuque	34
William E. Hart.....	Odebolt	76
Ernest S. Heilman.....	Ida Grove	67
Maurice C. Hennessy.....	Council Bluffs	55
David A. Herron.....	Iowa Falls	62
Robert G. Hinrichs.....	Manson	58
William M. Hogle.....	Keokuk	70
Fred H. Howard.....	Strawberry Point	86
Lysle C. Howe.....	Muscatine	68
Guy A. Lott.....	Osage	63
Warren E. McCrary.....	Lake City	53
William J. McGrath.....	Elkader	75
Johannes J. Miller.....	Ackley	71
Ernest M. Mills.....	Le Grand	83
Orry C. Morrison.....	Carroll	62
Milo W. Moulton.....	Bellevue	72
Elbert E. Munger.....	Spencer	78
William C. Newell.....	Ottumwa	69
Elmer R. Newland.....	Drakesville	66
Irving U. Parsons.....	Malvern	79
August J. Peterson.....	Forest City	70
Roscoe Pollock.....	Douds-Leando	64
Clarence M. Porter.....	Woodward	69
Carl A. Samuelson.....	Sheldon	53
Franklin W. Sells.....	Osceola	73
Fred M. Smith.....	Iowa City	57

Name	Town	Age
Ralph W. Snodgrass.....	Des Moines	39
Lester J. Spinharney.....	Cherokee	46
Trond N. Stabo.....	Decorah	76
William F. Sult.....	Gilman	77
Michael H. Thielen.....	Grundy Center	79
Gilbert N. Thompson.....	Jesup	78
Charles W. Tyler.....	Polk City	77
John M. Walker.....	Dubuque	70
Charles M. Werts.....	Des Moines	69
William D. Yavorsky.....	Cedar Rapids	36

REPORT OF THE PUBLICATION COMMITTEE

The year 1946 was an important one in the history of the Journal of the Iowa State Medical Society, for it marked the publication's conversion from an organ partially supported by membership dues to a self-supporting unit. The receipt of a bonus of \$3,-417.16 from the Cooperative Medical Advertising Bureau, an increased amount of advertising, and the careful planning of page forms to keep printing costs from skyrocketing (because of the increased number of color advertisements) were the factors responsible for the \$1,475.98 net profit with which the Journal began the new year.

Though light weight paper was still a necessity, the quantity was sufficient to merit a forty per cent increase over the number of original articles published in 1945.

The outstanding issue of the year was that published in October, commemorating Iowa's centennial of statehood. Articles for the scientific section were contributed by graduates of the State University of Iowa College of Medicine who have gained renown in their respective fields. The History of Medicine section, contributed by Dr. Walter L. Biering, likewise was noteworthy for its quality of presentation of "The Iowa Doctor One Hundred Years Ago."

The October issue also heralded the conversion from the old style hand tooled Goudy to a modern

san serif type for departmental headings. This not only unified the type used in and the size of the headings, thus improving the Journal's inside appearance, but also conformed with that on the front cover which was adopted in 1945. Headings and sub-headings were changed from light face to bold face type for improvement of readability and appearance.

That same month the Roster of Physicians in Military Service was replaced by a new section entitled Veterans Administration for the purpose of helping those of the medical profession keep abreast with veterans' affairs which will affect them.

Following the precedent established in 1943, the April issue was contributed by the State University of Iowa College of Medicine and was worthy of commendation.

With the January issue, Dr. Everett M. George assumed the duties of editor. An editorial board composed of Dr. John W. Dulin of Iowa City, Dr. Horace M. Kornes of Dubuque, and Dr. Ernest E. Shaw of Indianola was created in February for the purpose of increasing the number of specialized fields from which editorial comment was available. A change of personnel in the central office took place when Mrs. Don W. Dolk, who resigned July 1, was replaced by Miss Viola Turner. The Board of Trustees voted to change that person's title from assistant to the editor to assistant editor.

The Journal staff members are looking forward to 1947 as a year of continued advancement, both financially and journalistically. They appreciate the fine cooperation shown by members of the society and the Board of Trustees and trust that they will merit continued support throughout 1947.

	1944	1945	1946
Reading Pages	532	508	548
Advertising Pages	396	460	518
Percentage of Reading Pages..	57.3%	52.4%	51.4%
Original Articles	50	48	67
Editorials	53	54	56
Total Journal Expenditure....	\$14,117.08	\$16,619.17	\$18,904.22
Total Journal Income	\$12,307.60	\$16,541.11	\$20,380.20
Net Expenditure for Journal...\$	1,809.48	\$ 78.06	
Net Profit for Journal.....			\$ 1,475.98
Number State Society Members	2,443	2,401	2,381
Net Expenditure per Member..\$	0.74	.0825	

Everett M. George, Editor

Reports of Special Committees

REPORT OF THE HISTORICAL COMMITTEE

This annual report pertains to the calendar year of 1946. During the past year two county medical histories have been completed. The medical history of Wapello County, so excellently prepared by Dr. Clyde O. Henry of Farson, was concluded in the July issue. The medical history of Dickinson County was a distinct contribution by Dr. Ferdinand J. Smith of Milford; it was begun in the August issue and completed in the November number of the Journal.

A memorial tribute to Dr. William Jepson appeared in the January Journal, one to Dr. Frank M. Fuller in May, and to Dr. Maurice Charles Hennessey in the July issue, the latter being prepared by Dr. G. V. Guchlan of Council Bluffs.

In the Iowa City number in April appeared the interesting article by Dr. John T. McClintock entitled

"Comments on the Founding and Development of the College of Medicine." This issue also contained a memorial tribute to Dr. Fred M. Smith, late Professor of Medicine, University of Iowa.

The October Journal was dedicated to the Centennial of Iowa statehood and contained the historical article "The Iowa Doctor One Hundred Years Ago," by Walter L. Bierring.

The Committee desires to express its appreciation to the editorial staff of the Journal for its courteous cooperation at all times and to the several members of the State Society who contributed to the medical history of Iowa during the past year.

- Walter L. Bierring, Chairman
- Clyde A. Henry
- Charles L. Jones
- Lester C. Kern
- Henry G. Langworthy, Secretary

REPORT OF THE COMMITTEE ON MATERNAL AND CHILD HEALTH

Your committee has not had as many problems brought to its attention the past year as during the war years when the activities of the Children's Bureau with its EMIC and other governmental measures were demanding considerable attention. The EMIC has about run out although it still applies to men now in service.

At a meeting of the House of Delegates last spring this committee presented a request from the Iowa League for Planned Parenthood that it be allowed to send its information to physicians, public health agencies and social service agencies throughout the state. In this way the information might be obtained through ethical channels rather than through other unreliable sources. This request was approved in substance by the House of Delegates. However, as there seems to be some controversy on this subject your committee decided to present the question to the House of Delegates this spring in more detail, with a request for approval or disapproval.

H. E. Farnsworth, Chairman

REPORT OF THE SPEAKERS BUREAU COMMITTEE

After being somewhat curtailed during the war years, the Speakers Bureau got back into the swing in 1946, and conducted a very successful postgraduate course at Carroll, Iowa. The program for the meetings included speakers from Rochester, Chicago, and Omaha, and reports from physicians attending this course were very favorable.

Many medical films were procured by the Bureau and shown at county society meetings. In response to inquiries for speakers, physicians from the University Hospitals, Iowa City and local communities were secured to discuss various subjects at meetings of county medical societies and lay organizations.

With the splendid cooperation from physicians throughout the state, a medical program was presented each week over radio stations WOI at Ames and WSUI at Iowa City. The worth of these would seem to be proved by the 1,560 requests for copies of these talks.

With the beginning of 1947 the Speakers Bureau wishes to express its appreciation to all who helped make the past year a successful one, and to pledge cooperation and assistance to physicians throughout the state.

George E. Mountain, Chairman

REPORT OF TUBERCULOSIS COMMITTEE

This committee has not had a called meeting but contact has been kept through correspondence, personal interview, etc., with the various members. This committee has continued further to advance the previous friendly relationship between the Iowa State Medical Society and the other organizations in the field of tuberculosis, such as the Iowa Tuberculosis

Association and the State Department of Health, and has worked toward the further eradication of tuberculosis from our state.

J. Carl Painter, Chairman

The Speaker: The Treasurer's report.

Treasurer Downing: I move that the Treasurer's report as printed in the Handbook be accepted.

The motion was seconded.

Dr. Harold A. Housholder: I have had several inquiries relative to this section of the Treasurer's report, which states that the dues have been raised to \$15. Was that an act of the House of Delegates last year?

The Secretary: The act of the House of Delegates in approving the Trustees' report and approving the recommendation for raising the dues to \$15 constituted an act to approve the raise in dues to \$15 last year.

The Speaker: Any further discussion? All in favor of the acceptance of this report signify in the usual fashion; contrary the same. *The motion is passed* and the report is accepted.

Report of the Board of Trustees.

Dr. John I. Marker: I move that the report as published in the Handbook, from the Trustees, be accepted and the recommendations be adopted.

The motion was seconded, put to a vote and carried.

The Speaker: The report of the Delegates to the American Medical Association.

Dr. Thomas F. Thornton: Mr. Speaker, the reports were published in the Journal. There is no further report. I move the adoption of the report as published in the Journal.

The motion was seconded, put to a vote and carried.

The Speaker: The report of the Council appears in detail. Are there any additional reports any of the Councilors may wish to make at this time? If not, it would be in order to have a motion to accept the reports as printed, in their entirety, and save time in that manner.

Mr. Downing: I so move.

The motion was seconded, put to a vote and carried.

The Speaker: Reports of standing committees of the House of Delegates. Committee on Constitution and By-Laws, Dr. Henkin.

Dr. John H. Henkin: Nothing to report, sir.

The Speaker: Report on Finance, Dr. McClure.

Dr. Ernest C. McClure: I move we accept the report of the certified public accountants. We haven't any other examination.

The motion was seconded, put to a vote and carried.

The Speaker: The Committee on Legislation, Dr. Billingsley.

Dr. John W. Billingsley: Mr. President, I have a brief additional report to bring the members of the Society up to date on what is happening over on the Hill. First, on February 18 your Legislative Committee mailed each member of the State Society Legislative Bulletin No. 1, acquainting you with

all the legislation which was coming up before this session of the legislature.

Then we mailed another bulletin, Legislative Bulletin No. 2, to all the members of the Society on March 7. I want to tell you briefly what has happened since that time. In the first place, as your President told you in his address, the tuberculosis bill has been passed and has been signed by the Governor. In the second place, House File 314 and House File 456, the hospital enabling act and the hospital licensing act, have both been passed and are on the Governor's desk for his signature. He may have signed them today, I don't know.

Next, House File 106, which raises the workmen's compensation allowance to \$800 from \$600 ran into trouble. It was passed with amendments in both Houses and, therefore, had to go to a conference committee.

Your committee contacted the members of this conference committee with the result that the committee brought it before the houses again, with recommendation for its passage. This afternoon it passed the House and I think tomorrow will pass the Senate.

The last one, House File 262, which has to do with the county boards of health, and is a bill which the State Health Department wants, has already passed the House and is now in the Senate sifting committee. We have the promise of the sifting committee that it will be reported out and the assurance of the membership that it will be passed.

The Speaker: You have heard the report that is in addition to that which is printed in the Handbook. What is your pleasure?

Dr. Housholder: I *move* it be accepted.

The motion was seconded, put to a vote and carried.

The Speaker: The Committee on Medical Education and Hospitals, Dr. Scanlon.

Dr. George H. Scanlon: Mr. President and Members of the House of Delegates: I am extremely sorry my report could not have been published in the Journal in advance, but maybe it is just as well. If you want a complete report of all the material I have attached, I am afraid it will consume too much of your time but, if you do, you can ask for it and I will be very glad to read it afterwards.

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

We, the committee chosen by you men to investigate the problems with which our medical school at the University of Iowa is faced and to analyze the outlined program which is now in effect, wish to report our findings, our opinions, and our recommendations in order that steps may perhaps be taken to correct the existing ills. In presenting this report we are fully aware that it will not meet with the complete approval of the men who have definite, fixed opinions on the respective sides of the question, but we have not been asked to

decide the virtue of either side of the controversy, only to present to this august body the facts, and to let the Society as a whole decide what further action, if any, should be taken.

To obtain information for this investigation we interviewed the President of the University, the Dean of the College of Medicine, and various faculty members, both preclinical and clinical. By all of these we were received in a very courteous and open-minded manner. The Dean and the President outlined to us their administrative problems, and the faculty members presented to us their respective views and difficulties. At this point may we state that we felt all were absolutely honest and sincere in their opinions.

For the sake of analysis we feel that this problem should be divided into three divisions:

1. The causes or difficulties which brought about this action.
2. The procedure which the President, the Dean, and the faculty chose to follow, and
3. The effects, both good and bad, which we might expect from the plan adopted.

Let us consider first the causes or difficulties which brought about this action. Our President and the Dean of the Medical School have a very serious responsibility. First, they are confronted with the fact that all of the people from the state of Iowa, as well as many from outside the state, expect them to maintain an outstanding medical school with highly capable men in all departments. Nothing but the best will do. Yet the people fail to stop and analyze some of the difficulties that are encountered in bringing this about. We must admit that the public did not provide the proper cooperation and effort to assist these administrators. The medical profession may reply that it was unaware of the problems or it would have offered assistance. This will be no excuse from now on!

Also, the President and the Dean were confronted with the fact that a number of their younger men with ability were leaving the school because of insufficient pay, lack of future promotion, and failure of the past program to provide them just recognition and adequate insurance for long years of service. We do not hesitate to cite, for example, Dr. James Greene, Dr. William Mengert, Dr. Horace Korns and others—all extremely capable, intellectual, high-class men—a credit to any school or society. It is a crime to ask men of high caliber to accept the salaries they were receiving and to remain on the faculty, presenting to you and me the services and ability we expect, or rather demand, from them. Our faces turned red with shame, not embarrassment, when we learned that one man for ten years supported his family on approximately \$200.00 a month because of the love of his work and his hopes for future promotion.

Some means to combat this exodus and to insure to those still on the staff adequate compensation for their just efforts had to be developed. Since the legislative appropriation would not permit salaries worthy of the ability and rank of our

faculty, other measures were indicated. This brings us to the second division of the problem, the procedure which was adopted.

To get at the root of the matter, the President of the University called various members of the faculty into conference to get their candid opinions. These men were from all ranks of the medical school, both preclinical and clinical. After various conferences, the Dean was asked to appoint a committee to formulate some type of program which would help overcome the existing problems. This committee, made up of Doctors Nathaniel G. Alcock, M. E. Barnes, J. S. Gottlieb, P. J. Leinfelder, Everett D. Plass, Frank R. Peterson, Fred M. Smith (deceased), and Dabney H. Kerr, was then approved by the President. However, this group, composed of five full-time and three part-time men, could not arrive at any workable solution and so it was agreed to call in Dr. Henry S. Houghton, former Dean of the College of Medicine, and to ask his assistance in formulating a plan agreeable to all concerned. What is known as the *Majority Report* or the Houghton Plan was finally presented as a product of the committee and Dr. Houghton. A copy of this report is hereto attached.

The proposed *Majority Report* did not receive complete approval, but after further study and consideration the *Medical Service Plan* was finally adopted. It reads as follows:

MEDICAL SERVICE PLAN
Official Copy

Received by Compensation Committee from President Hancher on Aug. 27, 1946.

1. *Compensation*

Working under the presidential mandate to propose a near full-time plan of medical practice and teaching, the following is recommended:

1. Adoption of compensation at the following levels for all members of the professorial staff:

Basic			
Assistant Professor	Associate Professor	Professor	Professor and Head
\$4000-\$6000	\$5000-\$8000	\$7000-\$9500	\$8000-\$10,000

It is suggested that assistant professors doing private clinical practice may increase their basic salaries by 50 per cent through private practice funds. Associate professors so engaged may increase their basic salaries by 75 per cent. Professors and professors and heads may increase 100 per cent or up to the maximum.

Maxima.....	\$9000	\$15,000	\$16,000	\$20,000
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In the cases of the present part-time heads, it is recommended they be allowed a maximum of \$25,000 annually. All others are to be on the scale as set forth above.

2. Fees are to be handled by the University as agent, following procedures now in use. Income from all extramural clinical activities are to be handled as the ordinary private fees earned within the hospital.

3. Fees are to be credited to the department concerned for meeting clinical salaries (commutation fraction), scientific programs (including necessary salaries), additional departmental equipment, etc. Fees from patients in excess of departmental requirements shall revert to a central scientific fund to be used for like purposes where needed.

4. The plan shall be instituted in full at the beginning of the 1947 biennium and shall be in operation for an experimental period of two years, subject to review thereafter by the university authorities in consultation with the faculty of the college.

5. Inasmuch as the additional budgetary funds for the complete implementation of the program must be sought from the legislature and if approved would not become available before July 1, 1947, it is proposed that during the intervening year (July 1, 1946-June 30, 1947) a restricted application of the plan be undertaken, in the sense that no changes in current budgetary salaries be made, but basic salaries at the maximum current full-time level be paid to all professors presently on part-time basis. All other features of the plan are to be followed as set forth above. For these men (part-time professors) the plan will not become effective until the biennium beginning July 1, 1947.

6. Faculty members in clinical departments who prefer to devote all their time to teaching and studies may accept appointments as professors on basic salary.

The administration of the Psychopathic Hospital should be changed to allow the Department of Psychiatry to function consistently with the other clinical departments in the College of Medicine.

A few brief remarks may help to clarify the picture. We wish to point out that the salaries mentioned are, of course, subject to the provision that the groups make sufficient money to pay the 100 per cent, 75 per cent and 50 per cent increases. If they do not make it, the income must be pro-rated.

All moneys collected by each separate department are credited to *The Departmental Service Fund*. Out of this are paid the salaries. If any money remains it is put for one year into what is known as *The Departmental Trust Fund*. This fund is University property but it is to be distributed only upon recommendation of the head of the department with the approval of the Dean. Moneys are available for use only in the department from whence they were secured, and may be spent for development of teaching, research, travel to scientific meetings, visiting other clinics and laboratories, etc. If by then the money is not all used up it goes into *The Central Scientific Fund* where it can be expended for the improvement of teaching and research and is available to other departments which were unable to make enough income to have any excess for research, etc.

At the same time that the *Majority Report* was submitted there was also handed in a *Minority Report*, which is hereto attached. This report was rendered by those members of the committee who

accepted the *Majority Report* but did not agree with all its points and procedures.

Now for the last division, (3) the effects we might expect from this plan, both good and bad. To enumerate a few of the good points:

1. It definitely makes possible an increase in the salaries of the underpaid associate professor, assistant professor, professor and even the full-time professor and head.

2. It might decrease to some extent the administrative duties of the President and the Dean.

3. It continues to some extent the stimulus which is derived from private patient contacts and fees.

4. It eliminates the practice of using junior men to augment the practice of their chief.

Now to enumerate some of the bad points:

1. The plan does nothing for the preclinical men except raise their base pay, but it does this in a very material way.

2. It sets pay standards within the Medical School which will be resented by men in other colleges of the University and other state schools.

3. It might cause the legislature to withhold some funds otherwise appropriated for salaries.

4. It evades the spirit of the statute requiring the publication of the incomes of state employees.

5. It is definitely a socialized plan in that

- a. It is a compulsory division or leveling of incomes.

- b. It gains most of its income from the three or four major departments.

- c. It is government by a committee.

- d. It reflects a type of faculty thinking which is bound to be reflected in the attitude of the student.

6. It may cause the loss of some of our most colorful and stimulating men and make it difficult to acquire good replacements.

For the information of this body, it is of interest to know that the question of part-time and full-time service has been a "thorn in the side" of various institutions for the last forty or fifty years. Various programs have been instituted in colleges, some with good and some with bad results. According to Minnesota's last regular bulletin, 12 per cent of the men there were on full-time, while 88 per cent were on part-time. In one of Johns Hopkins' recent reports, 26 per cent of the faculty was on full-time and 74 per cent on part-time. Chicago has a complete full-time faculty. Other institutions have tried different plans, with a certain degree of success—others with complete failure.

No one can conceal the fact that a university is an institution made up of various colleges, of which the College of Medicine is but one, and when this institution permits one of its divisions to collect fees, pay expenses, salaries, etc. out of the compensation received, there is no question but what it is following the same lines that any private-practicing organization or clinic would do under the same circumstances. It is definitely in the practice of medicine. This fact cannot be denied, regardless of how it might be disguised. There is no question in our minds but what this plan is clearly a form of socialized or

communistic medicine. As one member of the faculty said in his interview, "Of course it has a socialistic and communistic tinge." This man is one for whom we have the greatest admiration as he admits the facts, but denies it is his personal feeling. He felt the plan worth a try.

The President and the Dean are making a just effort to correct the conditions which will wreck the institution if they are not remedied; therefore, we as a Society should not condemn them too severely. We should be thoroughly familiar with their problems and be cooperative in offering them constructive criticisms.

Finally, our committee hopes the Iowa State Medical Society appreciates the magnitude of this question and the short time allotted to us for its study. However, from our brief but concentrated effort we have the following criticisms and suggestions. The criticisms are:

1. The present plan is definitely on a socialistic basis.

2. It puts the University Medical School in the practice of medicine.

3. The transition period from part-time to full-time was entirely too short. However, this was done at the insistence of the part-time men. They were offered a five year transitory period.

4. The jump in salary for the underpaid was probably too rapid, while the cut-down from the part-time man was too great.

For suggestions we offer these:

That any member of the staff from the head down to clinical professors be given the privilege of part-time or full-time. If he chooses part-time then it should be a restricted part-time, not judged by the amount of money that he might make but by the physical assets of the institution. The allotment of private bed space should be made according to rank, and to do so it may be necessary to grant more than the 5 per cent now agreed upon with the State Society. That per cent can easily be computed. The base salaries of the part-time men must necessarily be low. The legislative allotment should then be ample to take care of full-time men at a salary worthy of their rank, and to leave adequate funds for research also.

Whenever a part-time man fails to devote the time and effort required of him by the school he should be dismissed by the proper authorities without question. If his restricted practice is adhered to to the letter, he will have ample time for all his teaching, research and administrative duties.

We feel the men in the practice of medicine throughout the state welcome individual competition but frown upon a group practice. However, the present plan, which is one chosen by the majority of the faculty, is already in force and must be given a fair trial. If we expect them to adhere to the 5 per cent bed space allotted for private cases we fear the ultimate results will be bad. It may work while times are good and money plentiful, but when and if the anticipated period of readjustment comes, we question if men of high caliber can be maintained.

And lastly, we recommend that the Society act with caution and pass no resolution at this time, but appoint a committee to make a further study of this vast subject in order that our medical school will not be the one to suffer from hasty judgment or action.

MAJORITY REPORT
(The Original Houghton Plan)

A committee consisting of Doctors Alcock, Barnes, Gottlieb, Leinfelder, Plass and Peterson vice Smith, with Kerr as chairman, appointed by the Dean and approved by the President, was asked to consider certain broad principles regarding the practice of medicine in the College, the question of disparities in income between chiefs of departments and the younger faculty members, the feeling of unrest and insecurity in the younger group and any other matters which the committee thought pertinent to the above questions.

The problem resolved itself under four main headings and each has been explored fully from all angles.

- I. Compensation
- II. Retirement
- III. Research
- IV. Reorganization of the Faculty

I. *Compensation*

Working under the presidential mandate to propose a near full-time plan of medical practice and teaching, the following is recommended:

1. Adoption of compensation at the following levels for all members of the professorial staff.

Basic			
Assistant Professor	Associate Professor	Professor	Professor and Head
\$4000-\$6000	\$5000-\$8000	\$7000-\$9500	\$8000-\$10,000

It is suggested that Assistant professors doing private clinical practice may increase their basic salaries by 50 per cent through private practice funds. Associate professors so engaged may increase their basic salaries by 75 per cent. Professors and professors and heads may increase 100 per cent or up to the maximum.

Maxima	\$9000	\$15,000	\$18,000	\$20,000
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In the cases of the present part-time heads, it is recommended that they be allowed a maximum of \$25,000 annually. All others are to be on the scales as set forth above.

2. Fees are to be handled by the University as agent, following procedures now in use. Income from all extramural clinical activities is to be handled as the ordinary private fees earned within the hospital.

3. Fees to be credited to the department concerned for meeting clinical salaries (commutation fraction), scientific programs (including necessary salaries), additional departmental equipment, etc. Fees from patients in excess of departmental requirements shall revert to a central scientific fund to be used for like purposes where needed.

4. The plan shall be instituted in full at the beginning of the 1947 biennium and to be in operation for an experimental period of two years, subject to review thereafter by the University authorities in consultation with the faculty of the college.

5. Inasmuch as the additional budgetary funds for the complete implementation of the program must be sought from the Legislature and if approved would not become available before July 1, 1947, it is proposed that during the intervening year (July 1, 1946-June 30, 1947) a restricted application of the plan be undertaken, in the sense that no changes in current budgetary salaries be made, but basic salaries at the maximum current full-time level be paid to all professors presently on part-time basis. All other features of the plan are to be followed as set forth above. For these men (part-time professors) the plan will not become operative until the biennium beginning July 1, 1947.

6. Faculty members in clinical departments who prefer to devote all their time to teaching and studies may accept appointment as professors on basic salary.

The administration of the Psychopathic Hospital should be changed to allow the Department of Psychiatry to function consistently with the other clinical departments in the College of Medicine.

A committee of five, elected by the faculty and consisting of three departmental heads and two non-heads, shall assist in the operation and supervision of the compensation plan. The committee shall elect its own chairman who shall serve for one year. Members shall be elected for three years except that at the first election the members shall be elected so as to allow staggering of the tenure.

The duties of this committee shall be to supervise the operation of the compensation plan; to stand ready to discuss with the departments through their heads their problems concerning the disbursement of their private patient funds; to recommend to the Executive Committee general policies regarding the use of said funds and to assist all departments in maintaining the spirit of the plan.

II. *Retirement*

1. It is proposed that faculty members in the College of Medicine be retired at the maximum retirement salary at the usual age and upon the conditions laid down for other Colleges of the University, with the understanding that the individual so retired may be assigned to part-time teaching functions by the Dean or the head of the department concerned, or both.

2. In case of clinical professors who desire to carry on independent practice after their retirement, they may do so unrestrictedly with the understanding that they are to establish their offices and use clinical facilities other than the University Hospitals.

(In the case of Dr. Clarence Van Epps, the above conditions regarding retirement salary and private practice shall be retroactive.)

(It is strongly recommended that on retirement, Dr. Arthur Steindler be allowed the use of the brace

shop in his private practice. It is understood, however, that precedence shall be given to the work of the Department of Orthopedic Surgery.)

III. Research

For the proper development of the College of Medicine, it is necessary that additional encouragement and support be given those who have the ability and interest to carry on investigative programs. The national reputation of the College is dependent upon the character of the research. Therefore, the following principles are presented for adoption in order to facilitate the development of an outstanding research program in the College:

1. Pursuit of research is a definite function and responsibility of the College of Medicine.

2. Opportunity for research should be available to all the faculty.

3. It is the responsibility of the departmental heads to encourage and stimulate fundamental and clinical research and afford opportunity and time to their staff members.

4. Departmental heads should be encouraged to obtain research workers who would form a nucleus from which an outstanding investigative program could be set up.

5. In order to facilitate the growth of research, a specific adequate appropriation for this purpose should be obtained from the legislature.

IV. Reorganization

(Note: This Section IV met with objection from the Dean and the President. They held that it was in conflict with the Code of Iowa. No action was taken on it by the Medical Council on June 3 or the Medical Faculty on June 5. It apparently was not presented to the Board of Education on May 14 or July 2.)

Recognizing that policies can be determined finally only by the State Board of Education and that the Dean of the College is an administrative officer responsible to the President, it is recommended that the faculty of the College be accorded the rights to discuss the policies of the College in democratic fashion and to make recommendations through the above channels to the State Board of Education. To this end the following suggestions are presented for consideration:

There shall be an annual meeting of the faculty of the College of Medicine, attendance at which is strongly urged, to perform the following functions—

1. To hear a summary report by the Dean of progress in the preceding year.

2. To hear summary reports of the year's progress by chairmen of standing committees.

3. To elect an executive committee of seven members. Two senior members (departmental heads) and one junior member (non-head) shall be elected from the pre-clinical departments and two senior and two junior members from the clinical departments. The members of each group—pre-clinical and clinical—shall nominate to the faculty their members of this committee. The Dean shall be an ex-officio member of the committee. Nomina-

tions for members of this committee shall be made from the floor, but voting shall be by (absentee) ballot during the ensuing week. The chairman of the executive committee shall be elected by the members of the committee and shall serve for one year. The committee shall meet at the call of the chairman or the Dean.

The functions of this committee may be defined within broad limits. They shall advise with the Dean in the formulation of major policies necessary for the integrated operation of the College. Thus, the receipt of reports of standing committees, discussion with the Dean of significant alterations in the budget, assistance to the Dean in the selection of department heads and regulation of departmental size are examples of the committee's area of function. For the discussion of problems which concern any given department or area, the head or his representative shall be asked to consult with the executive committee or standing committee which is considering the problem. Minutes of the meeting of the executive committee shall be kept. All members of the faculty will be kept informed of actions taken.

The following standing committees are suggested:

- a. A committee of 5 on curricula
- b. A committee of 5 on research
- c. A committee of 5 on hospital problems
- d. A committee of 5 on admissions
- e. A committee of 3 on library
- f. Committees on student promotions shall be made up of representatives of the departments under which the work was taken.
- g. ?

Standing committees consisting of 4 members shall have one junior member; committees of 5 shall have two junior members. They shall be appointed by the Dean in consultation with the Executive Committee and shall report to the Executive Committee. Each committee shall elect its own chairman who shall hold office for one year.

4. To discuss other business. It shall be the privilege of any member of the faculty to present business of any nature pertinent to this meeting. However, the nature of this business must be circulated to all members of the faculty two weeks in advance of the faculty meeting.

In order for the faculty to function in the most democratic fashion, it is recommended that:

- a. Each member of the faculty holding the rank of assistant professor, associate professor, or professor has a right to one vote.

- b. Election to the Executive Committee or appointment to standing committees shall be for a period of three years. So that adequate staggering of the composition of the committees may occur, at the first faculty meeting, proportional representatives shall be elected or appointed for a 3, 2, or 1 year period. No one shall be nominee for re-election or re-appointment to a committee on which he has served until after one year has passed.

- c. Special committees shall be appointed by the Dean to consider special problems, these committees to report to the Executive Committee.

d. Special faculty meetings may be called during the year by the Dean for purposes of notification or discussion of important events or policies affecting the College of Medicine.

e. Vacancies on the Executive Committee shall be filled by appointment by the Dean. Vacancies on standing committees shall be filled by the Executive Committee.

It is suggested that Section IV be subject to review at the end of the 1947-49 biennium.

COMMITTEE ON THE REORGANIZATION OF THE MEDICAL PRACTICE IN THE UNIVERSITY HOSPITAL

Minority Report

1. The minority group endorses that part of the Houghton Plan that has to do with the reorganization of the faculty and recommends it without any change.

2. The minority recommends that part-time be retained and that it be extended to the younger men of the staff who desire it and whose chiefs approve and recommend it for them.

3. In lieu of No. 2, the minority endorses the Houghton Plan for compensation on the condition that Doctor Henry S. Houghton be brought here and appointed to install it and supervise it during its two year trial period.

4. The minority makes the following statement that explains their stand.

Statement of the Minority Group

It is quite evident that the College of Medicine is about to embark upon a new adventure, the essence of which is the abandonment and liquidation of the part-time policy and part-time men and the adoption of a narrower policy which is essentially a full-time plan. The part-time men and the full-time men who believe honestly in part-time in medical education wish to make this presentation of their philosophy.

At the outset we would like to make ourselves plain in some terms. "Unrestricted private practice" and "unlimited private practice" have been commonly and rather loosely used. There is no such thing as unlimited private practice here, or elsewhere. All private practice is limited. It is limited by a man's time; by his ability; by his location; by the amount of practice available to him; by the hospital beds at hand; and by many other things. Certainly in this institution private practice never has and never can be unrestricted. It has been limited by the fact that the greater portion of a man's time is taken up in his teaching responsibilities. It has been definitely limited and restricted by the limitation that has been put upon the beds we are permitted to use for private patients. Private practice here has always been limited and restricted both for the part-time men and the full-time men.

We feel that it is most unwise to make any radical change in policy in the face of a future so unpredictable and especially to adopt a plan that, so far as we know, has not proven successful in any institution

similar to our own and which, on the other hand, we do know has brought dismal distress in some places.

The minority group firmly believes that the policy of the College of Medicine should not be limited to full-time or to part-time plans, but should be an elastic and workable combination of the two. These men believe that these two plans are compatible and can co-exist in constructive progressive harmony. We believe in one simple and workable fundamental principle. It is based upon the fact that any institution is the sum total of the men who make up the staff and who do the work. The important thing is to get and to keep the right men on those terms that will bring them to us and that will keep them here. Anything that interferes with this basic policy is to be avoided. If the right man wishes to come to us or to remain with us on a full-time basis then we say wholeheartedly give him full-time and *assure him that he can have it as long as he so desires*. On the other hand if the right man insists upon coming on part-time or if the right one desires to change to part-time, we hold that he should not be eliminated from our consideration or blacklisted or liquidated, if he is already here.

Valuable teachers of medicine are hard to find and certainly the field from which they are to be selected should not be narrowed down to those men who are willing or who are compelled by circumstances to accept full-time, or who by inheritance or marriage are so situated financially that income is not a factor.

We do not object to the full-time man except when he insists that his colleague of the part-time philosophy must abandon his convictions, join the one party ideology, or be liquidated. However, it should be stated here that we do not feel that the full-time men of this faculty have initiated the change that is taking place. We do not think that they welcome it, but they have done nothing to oppose the change. This change has come about by order of the administration. We have had and we do have valuable men on our staff, who were and are full-time men. We would never think of asking them to change, much less of compelling them to do so. We recognize their honest convictions and we realize that to force them to go on part-time would make them unhappy and would probably decrease their value as teachers. We ask for the same consideration from them and from the administration. We have also had here great part-time teachers; men who have contributed much to the progress of the school—C. P. Howard, C. J. Rowan, F. J. Rohner, Howard Beye, Clarence Van Epps, Fred Falls, Arthur Steindler and others. They would have been great and good teachers as full-time men, but there is this difference: Under the proposed plan these men would not have been here.

We therefore recommend, as we have always recommended, that the part-time policy be retained. Further, we recommend that the part-time policy be extended to the younger men who desire it. We believe that part-time should not be limited, as it has been during the past few years, to only the

chiefs of staff. The young man should have the right to request a part-time status and if the request be approved and recommended by his chief, then it should be granted. The first responsibility of any staff man, whether he be part-time or full-time, is his teaching responsibility. If a part-time man or a full-time man allows anything—whether it be private practice, laziness, recreational activities, social enterprise, or anything else—to interfere with his educational responsibilities, then he should be eliminated.

We of the minority recommend simply this: Get and keep the right men, stimulate them, make them happy and content, develop them, and make them understand that their status is safe. We present the past thirty years' history of this institution to prove our point.

All good medical schools should aim to develop more good men than will meet their requirements. At all times an extra supply of desirable individuals should be in the process of making and it should be the objective of the institution to place these men in excellent positions elsewhere where they can further develop the ideals that have been engendered while they have been with us.

The Story of the Investigation—What Brought About the Present Situation

During the past several years things apparently have not been going well in the Medical School. It seems to be the common opinion both within and without the School that something has been and is wrong. Some hold that there has been little progress; some even go so far as to say that there has been decline and deterioration. One man of the staff a year ago made this statement: "A year ago I would have said that the School is declining year by year; at the present time I would say the deterioration is noticeable month by month, and that in another year at this rate it will be a class B, or even lower, institution." What the real trouble has been or is; when and how it actually started, is undetermined, but the fact remains that something has been bad and is getting worse.

In September last year, President Hancher started an investigation. Whether this was initiated of his own accord; at the suggestion of the Dean, by instructions from the Board of Education; or a combination, we do not know. This investigation took the form of a series of conferences in the President's office with members of the Clinical Staff, chiefs and younger men—not all the chiefs, not all the younger men. How these men were picked for the conferences we do not know and it is of little importance. So far as we know, the President did not visit the hospital or any of the services, in order to get that more intimate touch and feel of the work being done. We hold that when you investigate an institution you should visit it. These conferences began in September and extended through October, November, December, and into January last.

Early in January a committee was appointed

by the Dean to wait upon the President and receive his instructions. Whether the Dean in appointing this committee took counsel with the President or any member or members of the instructional staff we do not know. That committee was made up of five full-time men (Kerr, Plass, Barnes, Leinfelder, Gottlieb) and two part-time men (Smith and Alcock). Kerr, a full-time man, was named by the Dean as Chairman. The committee has acted from the beginning independent of the Dean. Later when Fred Smith left us, the Dean appointed Frank Peterson to take his place.

Since the matter at hand involved largely the full-time and part-time policies the minority clearly and emphatically points out the unfairness shown in the composition of the committee and it holds that on account of this unfairness the whole thing here had an unnecessarily bad start.

On Jan. 18, 1946, the President called this committee to his office to be "briefed." All members of the committee were present, also Dean MacEwen and Mr. Dakin. The President gave us verbally the conclusions of the conferences he had held. His words were not in writing.

His conclusions as to our ills were four in number:

1. Overemphasis of private practice.
2. Too great a discrepancy between the income of the chief of a service and the men under him.
3. (a) The young men feel that their income is less than it would be if they were out in private practice.

(b) These men feel that they are not paid in proportion to the amount of private practice they are compelled to do.

4. The men—especially the younger men—wish some definite and guaranteed assurance of security.

Let us begin with the second conclusion—the great discrepancy between the income of the chief and the younger men. All are agreed on this point. None of our staff has been more outspoken about this injustice than we of the minority. Our plan to permit part-time for these men would have taken care of them on a just, economical basis. The Houghton Plan makes fairly just adjustments.

The third conclusion was divided into two parts. First, the younger man feels that his income is less than it would be if he were out where he could devote all his time to private practice. There is no question about this. Any man devoted to his teaching responsibilities must accept this sacrifice whether he be a full-time or a part-time man. A member of the University Hospital staff is the poor man's doctor and the University Hospital is not an asset in developing a lucrative private practice. This is said by one who has thirty years of such experience back of him. Nothing can be done about that.

As to the second part of No. 3—the young man feels that he is not being paid in proportion to the amount of private practice he is compelled to do. This is in many cases true and should be

corrected. The extension of the part-time status to these men would bring about the correction and that is what the minority has always recommended. The Houghton Plan will in a way take care of this, but not completely, and not without complications and misunderstandings.

Next, No. 4—The men wish assurance and guarantee of security. They want to feel that if their chief leaves they have some definite right to their jobs. The minority heartily endorses this. They want to feel that they are safe against changes in policies that come with changes in administration. We of the minority endorse their stand, but we call your attention to the following very self-evident fact. The present administration is putting into effect a policy that entirely changes the status under which many of us have been working for as much as thirty years. Did we part-time men not have a right to feel that we could go on as part-time men? How can you accept a pledge of security in words when by its very act the administration proves to you there is no such security?

Now back to No. 1—The overemphasis of private practice. Throughout the President's presentation this one thing was brought out as the big and outstanding cause of our ills. It was emphasized more than anything else. Mark you this—*no evidence of any kind was presented to substantiate this conclusion and no evidence has since been forthcoming.* A brief review of our past we believe will be enlightening. During the teens there was no evidence of overemphasis of private practice. Why? Because it was not here. We did not have enough to disturb anyone. During the lush twenties it still was not here in volume great enough to go around, and, certainly, no one will be so bold as to suggest that there was overemphasis of it during the depression of the thirties when there was such a distressing scarcity of it, both within and without the school. There was a greatly increased demand from private patients during the war years due to increased personal income and greatly decreased doctors in the state. Some of us hold that it was our duty to humanity to do more than we were allowed to do. We were not permitted to use more beds for private patients. We hold that with only eighty beds available you cannot easily overemphasize private practice at any time. We also incidentally hold that the administration can never justify itself for denying available beds to the taxpayers of this state simply because those taxpaying human beings were able to pay for the use of those beds. We therefore hold that with the exception of the war years there has been no chance, no desire, or no inclination to overemphasize private practice. Time and conditions will take care of this.

Will the Houghton Plan correct this evil? It will not. In order to make that plan work, more money will have to be earned and therefore more private practice will have to be done. This brings us to the ridiculous position of embarking on a policy that increases the very thing that is said to have created our ills. But to us of the minority

this is not an argument against the plan because we feel that private practice is not only compatible with good teaching but actually enhances the quality of it and is essential to it. But it must be kept as individual private practice and not group private practice.

Let us review the history of part-time and full-time in this school. During the teens all the clinical men were part-time, both chiefs and younger men. No one can question the teaching abilities of Howard, Rowan, Rohner, Van Epps, Beye, Steindler and so on. No one can be blind to the school's progress during that time. Never has it been greater. Those men would have been no less efficient as full-time men, and the progress under them would have been as fine but the important thing is this, and we repeat—if you had had in effect a policy limited to full-time employment those excellent men would not have been here.

During the twenties there came to us some men who preferred full-time. They were good men. They were welcome. Progress continued.

During the thirties the full-time men greatly increased in number. During the late thirties or early forties there evidently came a definite change in policy. Part-time was still available to the chiefs, but not to the under men. These under men had no choice. They must be full-time. Just when, why and by whom this policy was initiated no one seems to know. It was not done by the faculty. There is no record, so far as we know, of any action by the Board of Education. The President disclaims it. No one admits parentage. Anyway, by 1941, the full-time men greatly outnumbered the part-time men. Then something happened. The school started to deteriorate. The natural conclusion would be that it was the result of the spread of this full-time policy—Was it? You may draw your own conclusion but the answer of the minority is a most emphatic NO.

The Story of the Committee

The committee met for the first time on January 24. There was considerable discussion and doubt as to just what its function was. The President had pointed out quite definitely that part-time was out and that full-time as we had known it was not possible on account of lack of money. He told us to bring in some plan approaching as nearly as possible the characteristics of full-time—a plan that would correct our ills. He more than intimated that if we could not find one, then one would be developed for us. Later when he "briefed" Frank Peterson he "frankly admitted that he had no solution." (Parenthetically, it might be well to state here that Doctor Houghton later reported to us that we had very little choice in what we could do since it was a directive and an order from the President that part-time was definitely out!) There was a discussion as to exactly what the President had said. A minority member (Alcock) suggested that the committee request a statement from the President

in writing. The committee thought this was not necessary, or in order.

Then there was discussion as to how the committee was to proceed, if at all. One minority member (Alcock) suggested that we start from the point where there was common agreement—namely, that the Medical School was sick; that we act as doctors that we are; examine the patient thoroughly; determine the cause of illness; make a diagnosis; agree upon the treatment that would eliminate the pathology and bring the patient back to vigorous health and then find ways and means of administering that treatment. This sensible appearing suggestion was brusquely turned down. Two of the majority members threatened to resign from the committee if this were even attempted. They held it would bring in personalities. Very little, if anything, was accomplished at this meeting.

There were one or two other meetings where little was done. Then they started to introduce and adopt resolutions that were to be principles upon which the plan for redemption was to be erected. These resolutions were not related—and to some of us were rather haphazard. One majority member referred to some of them as platitudes; another majority member termed several of them as silly. The minority introduced one that in essence covered the ground embodied in the plan first mentioned in this report, namely, get the right man. That was voted down four to two.

It was never clear just what the committee planned to do. Were they to continue to pass these resolutions and then hand them up to the administration with the request that "The Plan" be erected on the foundations of these things, or were they going to amass these and try to formulate a plan of their own? One resolution that passed, four to two, gave some inkling as to what the plan would be. This was of the type of the so-called "Pork Barrel Plan" that had brought such grief to Michigan in the twenties and to Virginia in more recent years.

Things went along with one meeting coming after another and promising progress was not being made and the minority became concerned. One of the minority (Alcock) suggested that Doctor Henry S. Houghton be requested to come here and do what he could to find some solution. The minority member who suggested this knew full well that Doctor Houghton was of the full-time philosophy; that he would not be playing on the minority team; and, in fact, would be calling signals on the other side of the line. However, we recognized him as a man of great wisdom, of deep human understanding who typified faith and trust. Fortunately the suggestion was favorably received by the committee and the Administration and he came, and you know his plan.

Please remember this, Doctor Houghton was restricted in his planning as was the committee. Part-time was ordered out by the President.

The Stand of the Minority Group on the Proposed Plan

We wish to make this very clear. We endorse it and pledge to it over a reasonable trial period our wholehearted support. We reserve the right, however, to express at all times our honest opinions, our criticisms pro and con, our doubts, and to point out the realities that must exist in order to make this plan work. The plan is not what we would have voluntarily recommended. It is much better than some that might have come to us and infinitely better than the one that apparently was on its way to us before Doctor Houghton came. Under certain conditions (call them ideal conditions if you like), we believe that it can work out for the great good of the school and for the good of every man involved. We will go a step further. We can visualize that it is possible for this to work out as well, if not better, than the one we proposed. We do question, however, whether or not we have, or can develop, those things that are so vital to its success.

We would like to point out here a few of the difficulties that are to be met and also enumerate some of the things that we must develop and acquire.

First: This thing must be accepted with candor and conditions must be faced frankly and honestly. For instance, already camouflage for the purpose of propaganda has appeared. This plan has been misnamed as "limited part-time." We of the minority, of course, hold that it is the same full-time that we have had in the past except with increased income. You cannot change a mule by calling him a horse or by clipping off his ears.

Second: Every last one of us must understand completely and fully that the successful operation of this plan is going to require infinitely more work and infinitely more trying cooperation than has been necessary in the past. To put it very, very bluntly, there will be much work to be done after 5 p.m. and before 8 a.m. We can promise you much sweat but we hope no blood, but we can also visualize that there will be complications that may come close to causing the shedding of blood.

Third: Under this plan there will be much greater interdependence of one service upon another and there will be a much closer scrutiny of results. Are we prepared to accept graciously and gracefully the necessary intimate criticism that will come?

Fourth: There will be services that will not be able to earn their keep; while there will be other services who will create some surplus. For instance, service "A" creates a surplus while service "B" consistently exhibits a deficit. What will the "A" men say to the "B" men when these same "A" men see their funds transferred? Naturally they will say, "Go to work!" Suppose, on the other hand, that the "A" men are not inclined to extend themselves in hard work and especially in night work to create the surplus that is necessary to satisfy the "B" men. What will happen when the "B" men

tell the "A" men that they must do this extra work? Do you suppose that this is going to promote harmony?

Even at this early date we have heard rumblings of discord. The men on these services of slight income fear that the men on the services of bigger incomes will have too much to say about the running of the institution.

Fifth: This plan is built upon the assurance that the next legislature and legislatures in the future will appropriate enough money to increase the basic salaries quite handsomely. This is a very, very important cog in the machine which you are constructing. Are you not gambling and putting your money on a rather long shot? In the face of the confused future with people everywhere and at all times tax conscious do you think that the legislature will be sympathetic in appropriating large sums of money to men who are permitted to have the proposed incomes? It would seem to us in these rather pessimistic days that you men are quite optimistic. Then, too, we should anticipate considerable reaction from the men in other departments of the University on smaller salaries.

Sixth: The reaction of the profession. This plan that we are to put into effect is part and parcel of the trend of the day in medical education. A part of the medical profession has come to look upon this as a trend towards socialized medicine and to regard it as part and parcel of state medicine. Whether it is or is not socialized medicine; what your opinion may be on this point, is of no moment. The important thing is, what does the profession think? We assure you it is very evident that the profession does think that it is state medicine. They will become more and more concerned since they feel that in those schools that are adopting plans similar to our own, the students are being subjected in their formative impressionable years to an atmosphere of state medicine. We believe that we are right in saying that the profession will not accept this with sympathetic kindness.

Also, this is group practice. It is putting the University into competition with the profession of the state, instead of allowing the individual staff member to cooperate with the individual doctor out over the state. Here, again, you may deny this, but your opinion does not count. The important thing is what the doctor out in practice thinks. Do you think for a moment that the profession of the state will be sympathetic when they have to compete in their practice with an institution that is supported by taxes that these doctors are compelled to pay?

Seventh: We have already pointed out that this is going to require more work because more money must be earned. That means more private practice. More private practice means more beds for private patients. We remind you that you have a sacred agreement with the State Medical Society limiting your beds to 5 per cent. Depending upon the

interpretation, this 5 per cent may mean fifty beds or, on the other hand, it may mean only thirty beds. Do you think the profession of this state will release you from that agreement when they realize that you are going to use those beds in order that the hospital that is supported by their taxes may compete with them in a form of medicine that they think is Socialized Medicine? If you think that you are certainly optimistic.

Eighth: How has this plan worked elsewhere? We do not know. On several occasions the minority members of this committee indicated that they thought that a very careful and thorough investigation should be made at every institution where any plan similar to this has been in operation. It was very evident that there was a great reluctance on the part of the committee to do this. At one time the chairman of the committee was instructed to send out some letters. Whether any investigation was made or not we do not know, but the fact remains that no report was ever made to this committee. We feel that this was a very, very important thing that was completely neglected.

The above are only a few of the many, many problems and difficulties that must be met if this plan is to be made to work successfully. Undoubtedly as time goes on many hazards unthought of now will make their appearance and will have to be met. The sailing is not going to be smooth and it is going to take everything that each one of us has to keep the boat on even keel.

There must be an infinite amount of wise and understanding leadership—leadership that stimulates and encourages. In the intimate association that this plan creates we must develop the ability to get along one with the other. There must be everywhere and at all times everlasting faith and trust and patience and forbearance that will neutralize all irritations and misunderstandings. There must be generosity in thought and action with a minimum of suspicion. We must forget that we are God's gifts to Iowa and self-righteous conceit must be replaced by a fine balance of courage and humility. There must be much giving and little taking and never again, under any circumstances whatsoever, shall there ever be a committee of five and two. Success will depend largely upon our ability and capacity to deal with matters of human understanding. We must cease to take ourselves so seriously and we must have a very good sense of humor at all times. We must get our heads out of the clouds, come down from our ivory towers and get our bare feet in contact with Iowa's black and fertile soil. All these things of the heart and of the soul; these things that are so vital and so necessary to the success of this plan, we of the part-time philosophy pledge them in abundance.

In closing let us point out one further warning. We are passing through days of hysteria and such times produce various trends in human relationships. Not all trends arrive at desirable destinations. Some are noble experiments with tragic endings. Time

will tell whether this trend in medical education is good or bad. Thank God for the two year trial limit that you are wise enough to place upon it!

The Speaker: Gentlemen, you have heard the report as read, evidencing the very serious attention it has received from this committee. This committee is a continuing committee on Medical Education and Hospitals. It is a standing committee of the House of Delegates, so that its work will normally be continued without further action on the part of the House of Delegates. The recommendation of the committee is that no particular, specific action be taken on this matter at this time.

What is your pleasure with regard to the report? Do I hear a motion?

Dr. R. F. Luse: Would it be possible for us to get a copy of that?

The Speaker: It will be printed in the July Journal. That is probably as soon as it will be possible to have a complete copy available.

Upon motion made and seconded, the report of the Committee on Medical Education and Hospitals was accepted.

The Speaker: The next committee is Medicolegal, Dr. Ely.

MEDICOLEGAL COMMITTEE REPORT

Dr. Frank A. Ely: During the year 1946-47, the Society has been called upon to participate in the defense of three of its members against malpractice suits. Two are still pending: one has been settled by the doctor's making a settlement. One, however, will probably die a natural death by way of the Statute of Limitations.

As chairman of the Medicolegal committee, I wish to recommend that a change be made with respect to legal representation in our malpractice suits. Upon the death of Mr. Charles Dutcher of Iowa City, the Society divided the state into four relatively symmetrical, geographic districts and authorized the appointment of four lawyers, one for each district. This action was fine on paper but strategically inconvenient and impractical. The Society has so few malpractice suits to defend that any one of the four legal appointees has little chance to perfect himself in the specialized form of defense required. In addition to this, it is very inconvenient for the chairman of the Medicolegal committee to be obliged to gain the authorization of the Board of Trustees in employing lawyers to defend certain members, when the services of the Society's regular lawyers cannot be used. Not infrequently prompt action has to be taken, and delay caused by consulting the scattered members of the Board of Trustees might lead to serious consequences.

It would seem that the appointment of one centrally located lawyer to represent our members would be advisable and that said lawyer be located near the business office of the Society. This sug-

gestion is made with hesitancy because its author lives in Des Moines; nevertheless, facility of action rather than political preference is its basis.

The Speaker: You have heard the report of the Chairman of the Medicolegal Committee. Do I hear a motion that the report be accepted?

Dr. Boice: I move that we receive and accept the report of the committee, which carries with it the suggestion the committee makes about the attorney appointment.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Medical Service and Public Relations, Dr. Sternagel.

Dr. Fred Sternagel: We have no further report to make. I move the adoption of the report as printed.

The motion was seconded, put to a vote and carried.

The Speaker: Report of the Publication Committee, Dr. George.

Dr. Everett M. George: I move the adoption of the report as printed in the Handbook.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Necrology, Dr. Parsons.

The Secretary: Gentlemen, will you stand while I read the names of our members who left us this last year?

The members arose and remained standing in silent tribute while the Secretary read the names of deceased members.

The Speaker: We will pass to the next order of business which is reports of special committees of the House of Delegates. Baldrige-Beye Memorial Committee, Dr. Hennessy.

Dr. Felix A. Hennessy: Since no theses were presented, your committee looked about and found a very worthy young man of high scholarship, fine professional attitude, and a gentleman. I will just relate his name and his scholarship standing as a student.

The boy's name is Warren Richard Moore. He is a senior in the College of Medicine. His home address is 3807 Macomb, Sioux City, Iowa. His Iowa City address is 117 Ferson Avenue. He led his class in three years of medicine, making better than Phi Beta Kappa. He made 3.4 in his first year, 3.6 in the second year and 3.6 in his junior year, when 4.04 is perfect. In addition, he is a splendid young man, and he is a senior. We recommend to you that he be awarded the stipend of the Baldrige-Beye. I so move.

The motion was seconded, put to a vote and carried.

The Speaker: The Cancer Committee, Dr. Morgan, for Dr. Plass who is unable to be with us.

REPORT OF THE IOWA DIVISION OF THE AMERICAN CANCER SOCIETY

Dr. Harold W. Morgan: As you know the Iowa Division of the American Cancer Society is closely integrated with the cancer committee of the state medical society. Practically all of the officers

of the American Cancer Society are also members of the state cancer committee. Only one meeting of the entire group was held during the course of the year and the service program of the organization has been held back, first, by the absence of Dr. Plass in Europe and later by his illness. Dr. Plass is chairman of the cancer committee of the state medical society which has served as the service committee of the cancer society.

The Iowa quota of the American Cancer Society goal of \$12,000,000 was \$204,000. We received approximately \$120,000 under the leadership of Mr. A. H. Blank. From this fund we paid \$48,309.67 to the national organization and we set up a budget of \$53,855. This was broken down as follows: administration expense, \$4,279.20; capital expense, \$1,350; public education, \$12,800; medical education, \$6,500; activities and approved projects, \$10,000; campaign expenses, \$5,000; and a contingency fund of \$13,925.80. From Sept. 1, 1946 to Apr. 1, 1947, all items of the budget were considerably under the allotted expense. This is because of the lack of program of the service committee and partially because of our endeavors to get the program underway. We have expended \$3,143.33 for administration, \$444.77 as capital expense. Total expenditures for public education are \$4,613.76. Under medical education we have spent \$1,480 which includes a postgraduate course expense of \$375 and literature which is now on hand and will be mailed to all doctors in the state of \$1,105. Campaign expense to date is \$2,400, and \$5,000 has been granted to the University for research purposes. We anticipate a much-expanded program next year.

Dr. Morgan: At this time I would like to urge the cooperation of you men in the program of the American Cancer Society. One of the biggest difficulties we meet in dealing with lay people is in securing the cooperation of the doctors in their communities. It is a thing that comes to us more frequently than any other complaint.

We are expected to spend the money that is being raised within the state, on cancer education, service and research. We are not allowed to pay for the treatment of any specific case, but we can provide help for tumor clinics in the way of supplies or anything that is needed in the tumor clinics. We have funds available for postgraduate study by any physician in the state who is interested in the cancer program. If he desires special training along certain lines that have some application to the cancer program, then we can provide him with transportation, a per diem allowance and tuition for the course that he desires to carry on or study. We cannot pay your expenses to go to a convention, but we can give you something if you want to go away and get some special work.

Remember that in this cancer work, whether we like it or not, it is a national project. There is a great deal of lay education coming in the way of publications, in our magazines and over the radio. The program is going to go on either with us or

without us, and we might as well try and stay with it and guide the program in the interest of organized medicine.

The Speaker: You have heard the report of the Cancer Committee. What is your pleasure?

Dr. W. R. Brock: I *move* it be accepted.

The motion was seconded, put to a vote and carried.

The Speaker: Fracture Committee, Dr. O'Donoghue. (Absent) Historical Committee, Dr. Biering. (Absent) Committee on Industrial Health, Dr. Reeder.

Dr. Reeder: Mr. Speaker, this Industrial Health Committee was set up about 1941, as some of you recall. We gave, through the State Department of Health, rather an extensive program on industrial health. You recall we held quite a number of programs throughout the state. Since that time this committee has been functioning more as a stand-by committee, waiting for any request the State Department of Health might make in order to correlate any of their functions in some of the surveys throughout the state, in our different industries, but during the past two years that request has not come.

Instances have come up in the way of a tuberculosis survey in certain industries, and we have simply gone to the county society and gotten permission, as it were, to make the surveys on tuberculosis.

But industrial hygiene is expanding very, very rapidly, and there is a place and function for a committee of the State Society. It is just a question in your committee's mind as to whether or not the State Department of Health really wants the services of this committee or not, and I am just wondering whether or not the committee should be continue, Mr. President. I *move* the adoption of the report, Mr. Speaker.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Maternal and Child Health, Dr. Farnsworth. (Absent) Committee on Scientific Exhibits, Dr. Fullgrabe. (Absent) Speakers Bureau Committee, Dr. Mountain.

Dr. George E. Mountain: I *move* the adoption of the report as published in the Handbook.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Tuberculosis, Dr. Painter. (Absent) There being no further committee reports at this time, the next order of business is election of Life Members. Dr. Parsons!

The Secretary: The following applications for Life Membership because of fifty years' practice and thirty years' membership have been received:

F. E. Heathman—Pocahontas.
J. J. Galman—Sheldon (formerly of Hopers).
W. F. Dean—Osceola.
J. F. Aldrich—Clarinda.
C. E. Birney—Estherville.
E. P. Bell—Pleasantville.
L. A. Thomas—Red Oak.
J. A. Craig—Keosauqua.
P. E. Gardner—New Hampton.
H. J. Gilfillan—Bloomfield.
F. G. Ladd—Cedar Rapids.
Wentzle Ruml—Cedar Rapids.

J. F. Auner—Des Moines.
 W. J. Netolicky—Cedar Rapids.
 C. A. Henry—Farson.
 D. T. Rambo—Ottumwa.
 W. F. Carver—Ft. Dodge.
 W. R. Bates—Ft. Dodge.

The Speaker: You have heard the list. What is your pleasure, gentlemen?

The Secretary: I *move* that the House approve the applications for life membership of the men whose names have just been read.

The motion was seconded, put to a vote and carried.

Dr. G. V. Caughlan: Probably through an oversight on the part of the new secretary of Pottawattamie county, you did not receive the name of Dr. H. C. Boyer of Council Bluffs who has been in practice for fifty-one years and has been a member for thirty years. I hate to bring this up without the action of the secretary, but I know this man is eligible. I would like to include his name in that list, if the delegates will permit me to do that. I so *move*.

The motion was seconded, put to a vote and carried.

The Secretary: I will also ask that the House take cognizance of one of the men whom I mentioned earlier in the meeting. He is eligible but no formal application has been received by the central office. That is Dr. W. R. Brock of Sheldon. I *move* that the House approve his life membership.

The motion was seconded, put to a vote and carried.

Dr. Clyde A. Boice: Is the delegate from Louisa county here? Weber, I think it is. (Absent) I happen to know that J. H. Chittum of Wapello graduated in 1897 and has been a continuous member since and is entitled to life membership.

Executive Secretary McCord: Has his county society voted him in?

Dr. Boice: I wrote and told them to notify you the other day.

Executive Secretary McCord: The county society has to have voted on it before we are supposed to do so.

The Secretary: The following applications for life membership because of disability have been received:

J. F. Stafford—Lovilia.
 V. J. Horton—Calmar.
 J. C. Hancock—Dubuque.
 G. B. Brown—Clarion.
 J. T. McConaughy—Mt. Pleasant.
 C. A. Waterbury—Waterloo.
 G. G. Bickley—Waterloo.

Mr. President, I *move* that the House approve life membership because of disability for these men.

The motion was seconded.

Dr. Caughlan: I would like to add to that list Dr. William P. Hombach of Council Bluffs who graduated in 1901, who has retired from practice now. He is 85 years old and disabled. He has been a member of Pottawattamie county since location in Council Bluffs in 1901.

Executive Secretary McCord: Has your county voted on both of these names?

Dr. Caughlan: Yes.

Executive Secretary McCord: That is all right then.

The Speaker: You have heard the motion made and seconded. Any remarks?

The motion was put to a vote and carried.

The Speaker: Are there any memorials or communications to be received at this time? (None) We next come to new business.

I note here there is a question of membership classification for residents in hospitals. I believe Polk county wants it considered. Who is to present it?

Dr. James A. Downing: I hardly know what you are talking about. The only thing I know about is a ruling from the Attorney General that all residents in hospitals must have an Iowa license for the practice of medicine. That is compulsory.

Executive Secretary McCord: This other matter is that Polk county wants to have residents given membership in the State Society at a reduced fee. They are granting them a reduced fee in Polk County and they want the State Society to grant a reduced fee.

Dr. Downing: I don't know anything about that.

The Speaker: We will pass that, then. Is there other new business? I believe there is a communication with regard to the Association of American Physicians and Surgeons that is to be heard at this time. Who is to present that? Dr. Howell, who is to present that at this time?

Dr. Howell: Dr. Harken.

Dr. C. R. Harken: I was invited to a meeting in Albia at which Mr. Northam talked. He is the executive secretary of the Association of American Physicians and Surgeons. This is an organization that seems to be getting considerable recognition among physicians of Iowa; particularly it has been endorsed and approved by the Wapello County Medical Society. Some of the men who are not members of the House of Delegates have asked me to introduce a motion extending the privileges of the floor to Mr. Harry Northham, executive secretary of this Association in order that he may explain the activities and functions of the Association to this group. So I *move* that he be granted the privileges of the floor for a few minutes.

The motion was seconded, put to a vote and carried.

The Speaker: Dr. Howell, will you bring Mr. Northam in?

Mr. Northam was escorted to the platform.

The Speaker: Gentlemen, it is my pleasure to present to you at this time Mr. Northam, executive secretary of the Association of American Physicians and Surgeons who will present to you a brief statement of the aims, objectives and accomplishments and purposes of this association. Mr. Northam!

Mr. Harry Northam: Dr. Spilman, Ladies and Gentlemen: Shortly after the Republican victory in November, we received several letters, fortunately only a few, from some of our members, two of them in the state of New York, one in New Jersey

and one in Arizona. The letters went something like this:

"I cannot make up my mind to continue the support of the organization since the Republicans are victorious. The New Deal is out. The Republicans will never socialize medicine, and it looks as if your Association will have to set up straw men to knock over if it is going to continue to justify the support of physicians."

Now, there is only one realistic answer to give to comments and letters of that sort. One of the greatest dangers facing American physicians is the return of organized medicine to its former state of unwarranted belief of security, full security and complacency.

I got back from Washington a week ago. I spent ten days down there, while the Association presented testimony against S. 140 and S. 712. I won't describe the bills. They are dangerous to medicine. The American Medical Association presented testimony opposed to them, and so did the Association, along with some other medical leaders.

The chairman of that committee, very favorable to socialistic legislation, is Senator Aiken, a Republican. The co-sponsor of S. 140 with Fulbright is Senator Taft, a Republican and, in the opinion of a great many medical leaders, one of medicine's most trusted men. We had him at our annual convention in Chicago last November, and he did an excellent job. His philosophy on government in regard to medicine is sound. He was dragged into the Fulbright bill.

I am starting that way to emphasize — and there are a lot more good examples — that medicine cannot depend upon either political party to save it; it must depend upon itself.

I would like to tell you about the International Labor Office, of which this country is a member state. In Social Security you will find Arthur Altmeyer, employees of the Federal Government, Isidore Falk and Wilbur Cohen, who are full members of the International Labor Office, which group seeks compulsory health insurance as a country, as an entering wedge to accomplish socialized medicine. The record shows that — their convention records. Anything I am saying here this evening can be documented by available records, so check me if you wish.

Those three men are experts on the medical care plan for the International Labor organization. Not one of this group that wants compulsory health insurance is a physician.

Then I would like to tell you of the tie-up between the International Labor organization, Social Security, and the Committee for the Nation's Health, headed by Mike Davis, a crony of Altmeyer and Falk. Then, in turn, there is the Physicians Forum, consisting of only 900 or 1,000 physicians, but Senators Wagner and Murray always refer to the Physicians Forum.

The proponents of political medicine include Social Security, the professional bureaucrats who

seek to perpetuate themselves in office, leaders, not leaders but at least politicians in both political parties who, since Bismarck's time, realize that social gifts, socialized medicine constitute political expedients for the attainment of power. Those are communistic and socialistic doctrines. Then there are a few individuals, sincere but misinformed, who honestly believe that if the government controlled doctors, medical care would be improved.

These are some of the reasons why a group of busy practitioners, just as you gentlemen are, all members of the American Medical Association, in December, 1943, organized the Association of American Physicians and Surgeons. They believed that the retention of the private practice of medicine was so important to physicians and their patients that a new organization should be formed which would devote its activities exclusively to medical economics, public relations and legislation, and focus attention and organized resistance on those three fronts where the proponents of political medicine are attempting to organize, socialize medicine and regiment physicians and patients.

Then they believed that the organization should have a plan to guarantee to the profession time enough to complete its important task of providing more medical care through voluntary, nonprofit plans; that the plan should be foolproof, legal. These physicians were responsible for the formation of the Association of American Physicians and Surgeons, which was organized by the unanimous action of the members of the Lake County (Indiana) Medical Society. It was not organized nor has it operated to compete with the American Medical Association, or any other regularly established ethical group. Membership in the American Medical Association is prerequisite to membership in the Association of American Physicians and Surgeons.

The first objective of the Association is to guarantee professional freedom to American physicians and their patients and preserve the American system of the private practice of medicine. It will achieve this objective when a substantial majority of eligible physicians join and thereby contract and agree not to participate in schemes for the distribution of their services which, in their opinion, are inimical to their interests or the interest of their patients.

Other important objectives of the organization, and I am going to read them, to hurry along:

2. Educate the people to use and benefit from voluntary plans of prepayment sickness insurance.

3. Effect the Association's 5-point "Plan for National Health" by means of education and legislation.

4. Operate an endless public relations program which, first, will correct any errors within the profession, and then use every available publicity channel to tell the public what has been accomplished in the public interest.

5. Conduct a continuing publicity campaign to inform all levels of the public of the value of the private practice of medicine and the evils of com-

pulsory health insurance and state or socialized medicine.

The Association this year is doing something about that by conducting an annual essay contest for junior and senior high school students in all public and parochial schools on the subject, "Why the private practice of medicine furnishes this country with the finest medical care." Next month, May 15, we award \$1,600 in cash prizes, in addition to prizes put up in some states and a great number of county medical societies, for state and county contests on those levels. Societies and schools from thirty-one states are participating this first year. It will be annual. We have found teachers preaching the gospel of socialized medicine to their students.

6. Earn again the respect for and understanding of the medical profession by the nation's lawmakers through proper, effective representation in Washington.

7. Effect increasing support of the American Medical Association so that this scientific body may continue to improve upon its contributions to public health and the science of medicine.

I am going to skip over the make-up of the house of delegates. The assembly is composed of the entire membership. Any physician, any member, may enter and make a resolution. Approval of actions taken in the assembly by the house of delegates constitutes adoption. However, if they disapprove, the assembly may overrule the house of delegates, which automatically sends the question to a referendum of the entire membership. Two years ago we polled the entire membership on two policies so that we were able to gather the majority thinking of the grass root physicians throughout the nation, rather than just our board of directors.

I want to emphasize one more point. The Association is not a labor union. Labor unions employ the striker as a threat to gain their objective, whereas physicians are employed by their patients, against whom they will never strike. I want to repeat that. Due to misinformation, there has been ridiculous distortion on that subject.

Members of the Association of American Physicians and Surgeons will never strike against the sick public. They will continue to serve their patients as they have in the past, whether or not they have money, but they refuse to do so as serfs of a political, state or national political, setup. It is the same plan of nonparticipation which the British Medical Association voted in January of this year, approximately 22,000 to 18,000 not to participate in the National Health Service Act. As a result of that action, they forced the Minister to renegotiate the government plan.

The only resemblance of the Association to a labor union is the one principle that it demands the inalienable right of determining the conditions under which it labors.

I would like to tell you five state medical societies have endorsed the Association: in 1944, Colorado; in 1945, Michigan; last year, the house of

delegates of Wyoming, of New Mexico and of the state of Washington voted unanimously to approve the principles and objectives of the Association.

I wish that I had time to read some of the endorsements. They include large and small: Denver, Albany, New York; Columbus; Seattle, Washington; Chicago, Illinois, and any number of groups, more than 100 county societies.

We have only asked five states to consider us, and those five endorsed us. This is our sixth presentation to a state medical society. Incidentally, I do want to extend my thanks for the privilege of being allowed to present briefly the principles and objectives of the Association.

To summarize, the Association is so organized that its members may determine the conditions under which they will or will not give their services.

2. The Association is established on a solid legal foundation.

3. When a substantial majority of eligible physicians become members, there can be no regimentation of medicine in America.

4. The Association of American Physicians and Surgeons is medicine's most thoroughly democratic organization, carefully safeguarded against any clique or group gaining control against the wishes of the majority.

5. The Association of American Physicians and Surgeons does not oppose the American Medical Association or any other ethical, regularly established organization.

6. The Association of American Physicians and Surgeons is ethical. It invites your thorough investigation. It has nothing to hide, a great deal to offer.

In conclusion, the members of this Association propose to act positively and objectively, to do everything possible to save the American public from the un-American system of nationalistic medicine and save professional freedom for American physicians. There is only one sure, positive solution to halting permanently and immediately state medicine, and that is the Association of American Physicians and Surgeons' plan of nonparticipation.

As soon as 75,000 eligible physicians join and thereby contract and agree not to participate in schemes of that sort, it is quite obvious our nation's lawmakers will not even consider passing legislation which would create a tax for a service they couldn't deliver.

Naturally, the organization strongly urges that physicians increase their support to the American Medical Association, and we hope that physicians will join the Association of American Physicians and Surgeons which devotes its activities exclusively, again, to medical economics, public relations and legislation, those three fronts where the battle is being waged by the proponents of political medicine to regiment the profession.

Our members, your colleagues, throughout the nation sincerely hope that you will consider the Asso-

ciation of American Physicians and Surgeons and take action to approve the principles and objectives of the Association, and thereby add your strength to thousands and thousands of your colleagues throughout the nation who propose to fight fire with fire, to use modern weapons to win a modern battle.

Finally, the members of this Association propose that there shall be no Munich for medicine, no appeasement of those who would impose an un-American ideology upon the American medical profession. Thank you.

Dr. E. E. Shaw: Inasmuch as about two years ago the House of Delegates acted on this question and based its objections largely on paragraphs in the constitution and by-laws of this organization; inasmuch as we have been informed by the secretary who spoke, and others, that the constitution and by-laws have been changed so as to make them acceptable, I *move* that the Chairman appoint a committee to receive these, to study them, talk the matter over carefully and discuss it with gentlemen in favor and against it, and report to the next meeting on Friday.

The motion was seconded, put to a vote and carried.

Dr. C. A. Henry (Wapello): Mr. Chairman, on behalf of the Wapello County Medical Society, I want to offer this resolution. It may be a little out of place because of the motion just passed.

The Secretary: Resolution of the Wapello County Medical Society:

"Whereas continued attempts are being made to foist some type of so-called 'state medicine' upon the public and the doctors; and

"Whereas the Association of American Physicians and Surgeons offers to the doctors and thereby to the public, a positive curb against the advance of 'state medicine'; and

"Whereas the Association of American Physicians and Surgeons has had, and will continue to have, an increasingly powerful influence in Washington in the protection of the doctor's interests; be it therefore

"Resolved, That we, the Wapello County Medical Society, recommend to the House of Delegates that it approve the Association of American Physicians and Surgeons and that it recommend to the various county medical societies and their members that they join and support the Association of American Physicians and Surgeons, its aims and purposes.

"Respectfully,

"Wapello County Medical Society

"L. A. Taylor, M.D., Secretary"

The Speaker: In view of the motion just passed, gentlemen, this resolution from the Wapello County Medical Society will be referred to the committee to be appointed and to report at your meeting Friday morning.

Immediately upon adjournment, the Councilor districts will convene and hold their caucuses for the election of members of the Nominating Com-

mittee. They will then report the names to the desk here.

Dr. Bernard: Inasmuch as you are to appoint a committee to go into this matter carefully, with the possibility of two opinions being offered, may I suggest that the time and place of meeting of the committee be posted so that anyone who wishes to talk or listen to the committee's proceedings may attend?

The Speaker: That is a good suggestion. I will appoint Dr. Shaw, Dr. Bernard and Dr. Henry. Immediately after the close of this session, they can select the time and place for meeting so that it can be posted and anyone having objections to or arguments for can appear and take part in the discussion on this matter.

Next is the determination of the time of meeting of the Friday morning House of Delegates. Do I hear a motion as to the time?

Dr. Boice: I *move* that we meet at eight o'clock Friday morning.

The motion was seconded, put to a vote and carried.

The Speaker: Is there any further business to come before this session of the House of Delegates? If not, we will recess until eight o'clock Friday morning.

The meeting recessed at nine thirty-five o'clock.

HOUSE OF DELEGATES

Friday Morning, April 18, 1947

The second meeting of the House of Delegates convened at eight-ten o'clock, President-Elect Spilman presiding as Speaker.

The Speaker: The first order of business of this session of the House of Delegates is the roll call.

The Secretary called the roll, and the following were present:

DELEGATES

Adams—C. L. Bain
Appanoose—J. C. Donahue
Black Hawk—E. L. Rohlf, Jr.
Cass—R. M. Needles
Cerro Gordo—C. O. Adams
Cherokee—C. F. Obermann
Chickasaw—P. E. Gardner
Clarke—C. R. Harken
Clayton—P. R. V. Hommel
Clinton—R. F. Luse
Dallas-Guthrie—A. G. Felter
Decatur—G. P. Reed
Des Moines—F. G. Ober
Dickinson—T. L. Ward
Dubuque—D. F. Ward
Fremont—K. Murchison
Henry—J. S. Jackson
Iowa—C. F. Watts
Johnson—S. C. Cullen
Johnson—J. W. Dulin
Johnson—A. W. Bennett
Keokuk—D. L. Grothaus
Lucas—Dean Curtis
Madison—I. K. Sayre
Marion—E. C. McClure
Marshall—O. D. Wolfe
Mitchell—R. L. Whitley
Monroe—T. A. Moran
Montgomery—Oscar Alden

Muscatine—C. P. Phillips
 Palo Alto—H. L. Brereton
 Plymouth—M. J. Joynt
 Pocahontas—W. F. Brinkman
 Polk—M. I. Olsen
 Polk—Lee F. Hill
 Polk—H. J. McCoy
 Pottawattamie—G. V. Caughlan
 Ringgold—E. J. Watson
 Scott—W. C. Goenne
 Scott—George Braunlich
 Shelby—C. V. Bisgard
 Story—J. E. McFarland
 Tama—A. J. Wentzien
 Taylor—G. W. Rimel
 Union—C. C. Rambo
 Van Buren—L. A. Coffin
 Wapello—C. A. Henry
 Warren—E. E. Shaw
 Webster—E. M. Kersten
 Winneshiek—F. A. Hennessy
 Woodbury—E. E. Morgan
 Woodbury—C. T. Maxwell
 Worth—S. S. Westly
 Wright—R. D. Bernard

ALTERNATES

Bremer—P. J. Amlie
 Buchanan—F. F. Agnew
 Buena Vista—H. E. Farnsworth
 Butler—J. G. Evans
 Davis—C. H. Cronk
 Emmet—S. C. Kirkegaard
 Fayette—A. F. Grandinetti
 Greene—J. M. Jackson
 Humboldt—C. A. Newman
 Jasper—J. W. Billingsley
 Jefferson—L. D. James
 Kossuth—T. J. Egan
 Linn—C. H. Stark
 Sioux—M. L. Larson
 Washington—E. D. Miller
 Wayne—J. H. McCall

OFFICERS

President—R. L. Parker
 President-Elect—H. A. Spilman
 Secretary—J. C. Parsons
 Treasurer—J. A. Downing
 Trustee—L. R. Woodward
 Trustee—W. A. Sternberg
 Councilor—L. L. Carr
 Councilor—J. B. Knipe
 Councilor—R. N. Larimer
 Councilor—E. F. Beeh
 Councilor—J. C. Hill
 Councilor—H. A. Housholder
 Councilor—C. A. Boice
 Councilor—R. C. Gutch

The Speaker: We will have the reading of the minutes of the Wednesday evening session.

The Secretary read the minutes of the Wednesday evening session.

The Speaker: The next order of business is the report of the Committee on Nominations by the Chairman of the Nominating Committee.

Dr. J. E. McFarland: "The Nominating Committee met in Parlor A at ten a.m. Thursday morning, April 17, with the following persons present: F. A. Hennessy of Calmar; S. S. Westly of Manly; H. L. Brereton of Emmetsburg; C. F. Obermann of Cherokee; J. E. McFarland of Ames; J. C. Hill of Newton; D. F. Ward of Dubuque; W. C. Goenne of Davenport; C. A. Henry of Farson;

G. P. Reed of Davis City and Kenneth Murchison of Sidney.

"Dr. F. A. Hennessy was elected chairman and Dr. McFarland secretary. After due deliberation the committee presented the following names for office for 1947-1948:

President-Elect—James E. Reeder of Sioux City; M. E. Barnes of Iowa City.

First Vice President—Ben T. Whitaker of Boone.

Second Vice President—Henry M. Pahlas of Dubuque.

Trustee—Walter A. Sternberg of Mt. Pleasant.

Councilors:

First District—L. L. Carr of West Union.

Sixth District—J. C. Hill of Newton.

Eleventh District—W. S. Reiley of Red Oak.

Delegate to American Medical Association—G. V. Caughlan of Council Bluffs.

Alternate Delegate to American Medical Association—E. E. Shaw of Indianola.

"(Signed) J. E. McFarland,

Secretary"

The Speaker: Gentlemen, you have heard the report of the committee. Are there any further nominations from the floor at this time? If there are no further nominations, does someone want to move the acceptance of this report of the Nominating Committee?

Dr. Boice: I *move* the report of the Nominating Committee be received.

The motion was seconded, put to a vote and carried.

The Speaker: We will next proceed to the election of officers. I will ask Dr. Felter, Dr. Sayre, Dr. Harken and Dr. Rimel to come forward and act as tellers.

The Secretary: There is a total of 84 in attendance, made up as follows:

Delegates—54

Alternates—16

Officers—14

The ballot is on James E. Reeder of Sioux City and M. E. Barnes of Iowa City.

Ballots were distributed and the members proceeded to cast their votes.

The Speaker: Has everybody voted? Are all the votes collected? The ballot is closed. The tellers will tally the vote.

The tellers proceeded to tally the vote.

The Secretary: Mr. President, Dr. Reeder has the required majority of votes.

The Speaker: Dr. Reeder is declared elected President-Elect.

The next order is the election of the First Vice President and other officers. There is only one name for each of the other offices. To save time, does someone care to move that the rules be suspended?

Dr. Boice: I *move* that the rules be suspended and the Secretary be instructed to cast the ballot of the Society for the balance of the ticket.

The motion was seconded, put to a vote and carried.

The Speaker: These officers are declared elected. Next is the place of meeting for the 1948 Session.

Dr. P. E. Gardner: I *move* that it be in Des Moines.

The motion was seconded, put to a vote and carried.

The Speaker: The 1948 session will be held in Des Moines, Iowa. Reports of committees. Are there any additional committee reports? Any additions to those committees which have reported? If not, we have a report from Dr. Shaw on the committee to study the Association of American Physicians and Surgeons.

Dr. Ernest E. Shaw: The committee met with Mr. Northam, the executive secretary of this association, after the meeting Wednesday night and talked with him for about an hour or so in regard to the organization. Then yesterday afternoon we had a session at which probably fifteen to twenty representatives, some in favor and some against the proposal, discussed it with us. They were rather evenly divided. We talked to Dr. Lull as to the opinion of the American Medical Association headquarters and, after considering the matter, we decided to present this report:

"Your committee approves in principle the efforts of organized medicine to prepare for active and passive resistance to any nationalized health program that would subordinate the medical profession to social groups or government agencies.

"Your committee further believes that the efforts of the Association of American Physicians and Surgeons to achieve these ends are commendable.

"We are unanimous in our objection to the mandatory provisions of subsections (a) and (b), section 2, which provide that, when 75 per cent of eligible physicians in a county become members, they cannot carry on professional relations with non-members in the county. We feel that any such provision should be subject, in each instance, to the determination of the county medical society or the local branch of the Association of American Physicians and Surgeons.

"Respectfully submitted,

"Ernest E. Shaw, Chairman

R. D. Bernard

C. A. Henry"

Dr. R. C. Gutch: In order to dispose of this, I *move we accept and approve the report of this committee and that we vote on this by written ballot.*

The Speaker: It has been moved that the report of this committee be accepted and approved and that the House of Delegates vote on it by written ballot.

The motion was seconded.

Dr. Downing: I am rising to ask for information. Are we voting to approve or disapprove of this association now?

The Secretary: The motion is merely to approve and accept the report.

The Speaker: The report approves in principle the efforts of this organization but objects to the wording of certain phrases in the constitution and by-laws. A vote "yes" will approve and accept this report. A vote "no" will disapprove the report

and throw it wide open, as it was before. It simply approves the principles and the purposes and the manner in which they are doing it, but objects to the wording in the constitution and by-laws. Is that clear?

Dr. Gutch: Will you read that again, please?

The Secretary re-read the report of the committee to study the Association of American Physicians and Surgeons.

Dr. John H. Henkin: Would a vote "yes" on this proposition enable this man who talked the other night to go on to the next state society and say, "Iowa approves the plan"?

The Speaker: It will enable him to say we approved the principle but objected to certain features, because that is clearly expressed in the report.

Dr. Henkin: I think that is exactly what we want to know, whether we are going to give the man the privilege of saying we approve it or not.

The Speaker: We give him the privilege of stating exactly what happened. We approve it in principle and believe their efforts are commendable, but definitely object to the wording of those sections.

Dr. Harken: Do you not think it is a waste of time to vote on this by written ballot? Could we frame this thing in a manner so that we do approve this report but we object to that principle? That is unanimous in this group, no doubt. The principle of the organization is all right, but we disapprove certain features of the constitution.

The Speaker: That is already incorporated in the motion. So we will proceed to ballot.

Dr. Boice: I know I am pretty dumb but it seems to me to imply two separate propositions. One is receiving or accepting the report, whichever may be voted. The gentleman the other night wanted this Society to approve this association and authorize them to go out and try to organize every county. I want to know, before I vote, what we are going to do. I am willing to receive the report, as we do any other report of a committee.

The Speaker: It is accepted, Dr. Boice, with the wording exactly as it was read, that we approve of this organization's efforts but we do not approve of these subsections in the constitution.

Dr. Boice: I want to know this, Mr. President: If this should carry, are we authorizing this association to go and work in the various counties?

The Speaker: They are already. They are at perfect liberty to do so. There is nothing in here that prohibits any county taking action as it sees fit.

Dr. Boice: They don't have to ask permission or authority of this Society or House of Delegates to do that, to try to organize Iowa? I want to know how I am voting.

The Speaker: I think it is perfectly clear that we approve it but we object to those sections.

Dr. Boice: Then I understand, if we approve this report, we are not giving the sanction of the House of Delegates to this association.

The Speaker: Not in its present wording of the constitution, but in its efforts, aims and objects.

The motion was re-read.

Dr. Caughlan: I think the thing we have to settle here this morning is this, and that was the Wapello County motion that was presented the other night: Are we going to approve this society or disapprove it? I don't think a vote on this report will settle it.

The Speaker: That can come up in an additional motion.

Dr. Caughlan: Can we amend this motion?

The Speaker: Not now.

Dr. Caughlan: Why?

The Speaker: It is already being voted on. It is being voted on by written ballot, because that was carried in that fashion. That is the ruling on it.

Dr. Harken: The thing is certainly ambiguous, because members of the group here do not know what their vote is going to mean when they cast it.

The Speaker: Their vote means approval of the report as brought in by the committee and clearly expressed. A "no" vote means you do not approve this report, and it will leave it exactly where it was before the committee reported.

Dr. Shaw: The committee definitely recognized that this was, as you say, an ambiguous report, because, with the material that was brought to us, we didn't feel it was up to us to try to decide for the House of Delegates what it wants to do about this. We did think we should present to you the various factors which we saw. Their ideals are the same as the American Medical Association; their objectives are the same, but their method of going at it is different. Whether or not the Society wants to approve the organization, as the resolution of the Wapello County Society said, to commend it and see that it is organized in the counties; or whether we just want to approve the objectives and ideas and let them go ahead as they see fit; or whether the Society as a whole wants to reject it was not for the committee to decide. We did want to call your attention to the fact that, although at their last session they passed an amendmet to their constitution and by-laws attempting to change the regulation which seems to us very pernicious, the changes they made did not do so.

They presented to us an opinion of counsel to the effect that their resolution did change it. However, we felt we did not know their counsel. We called in the counsel of the State Medical Society of Iowa who went over the constitution and by-laws and agreed with us that this change referred to only one of three pernicious points in their constitution and by-laws. The other two, and particularly the one which covers not practicing with anyone who does not belong to the organization, were not changed in any way.

On talking to Mr. Northam and other men, we learned the intent was to change all three. Whoever worded the by-laws amendment didn't know much about by-laws or the king's English and, in amending it, punctuated and worded it so that it amends only one very small portion. They did not

correct in any way one other very pernicious factor.

However, we thought this organization should know that we thought their objectives were the same as those of the American Medical Association and the Iowa State Medical Society as far as opposition to various governmental and other agencies is concerned, but because of the wording of their constitution and by-laws, we did not feel that they should be approved by any organization. Therefore, we turned in our report with the idea that it would be up to the House of Delegates to decide what it wanted to do in the whole matter.

The Speaker: Does that clear the situation?

Dr. Downing: I believe I got a trickle through, with the help of Gerald. If we vote "yes" on this, we just approve of what the committee says, and then we can have another motion to kick the thing's teeth in, if we want to.

The Speaker: Correct.

The members proceeded to vote.

The Speaker: Are all the votes in?

The tellers proceeded to tally the vote.

The Secretary: Mr. Speaker, the vote is as follows:

Yes—49 votes

No—30 votes

The Speaker: *The motion is carried, gentlemen.*

Is there any unfinished business to come before the House at this time? Are there any other committee reports?

Dr. E. D. Miller: I wish to present the name of F. M. Mahin of Ainsworth for life membership. He is seventy-eight years old. His disability is blind ness.

The Speaker: Has he been voted life membership?

Dr. Miller: He hasn't been but he will be at our next meeting.

The Speaker: Does that permit us to do it?

Executive Secretary McCord: If the House will waive its rules, because of Dr. Mahin's age, I think it will be permissible to do so, because another year might be too late.

The Speaker: It will be permissible with a special motion to waive the rules, if the House so desires. Do I hear a motion to that effect?

Dr. Miller: I *move* the rule be waived and that Dr. Mahin be given life membership.

The motion was seconded.

The Speaker: It has been moved and seconded that the rules be waived and this Doctor be declared elected to life membership on account of disability and his age. Any remarks?

The motion was put to a vote and carried.

Dr. E. C. McClure: We met and had a pretty good time. Next year we are going to meet here. We have been cramped for room. We have exhibits that only 200 or 300 members have seen. They just could not get to them, our sessions have been so crowded. I suggest that the Committee on Arrangements get a place next year where we have room enough and, if possible, all on one floor.

The Speaker: Any further committee reports? Any new business?

Dr. Caughlan: I would like to present again

an amendment to the Constitution. I *move* that the Constitution be amended as follows:

"Article V, Section 1. The House of Delegates shall be the legislative and business body of the Society, and shall consist of delegates elected by the component county societies. They shall have the sole voting power at meetings, except that the President shall cast the deciding vote in the event of a tie vote."

This is presented now, and it must be published in the Journal and voted on next year.

The Speaker: Any further new business at this time?

The Secretary: I have been asked to read a resolution pertaining to some provisions for admitting resident physicians to membership in the Iowa State Medical Society and adjustment of their dues.

"Several hospitals of this state are now approved by the Council on Medical Education of the American Medical Association for residencies or fellowships in specialties.

"Additional hospitals are seeking to qualify for approval in the training of residents.

"The Attorney General for the State of Iowa has ruled that resident physicians are engaged in the practice of medicine and will be required to obtain licensure in Iowa.

"The salaries paid resident physicians are on the same basis as those paid interns.

"Resident physicians do not compete with the doctor in private practice.

"Therefore be it RESOLVED that the House of Delegates of the Iowa State Medical Society give consideration to an amendment to the by-laws providing a new classification for resident physicians with commensurate dues or otherwise provide for the affiliation of resident physicians with the State Society at reduced dues.

"The Polk County Medical Society recommends that the State Society dues for resident physicians be established at \$1.00 per year."

I might explain there are six hospitals in the state which are approved for residencies in specialties. Miss McCord will tell you what the Board of Trustees has done on this particular question.

Executive Secretary McCord: Our Board of Trustees discussed this at a meeting the other morning when Dr. Parsons was absent. They felt that the State Society would be glad to make the residents' dues the same proportion of State Society dues as the county societies make the residents' dues. Here in Polk County the county dues are \$12.50. If they made the residents' dues, say \$2.50, which is 20 per cent, then the State Society would assess those residents 20 per cent of the regular dues. That may be complicated but they felt it possibly was an equitable way to approach the problem and might not require a change in the by-laws, if it were the wish of the House to do something like that.

The Speaker: What is your pleasure in regard to this?

Dr. O. D. Wolfe: I think it is perfectly ridiculous to ask a resident in a hospital to pay a penny.

Dr. McFarland: If this calls for a change in the by-laws, it would be two years before that could be done unless a specific resolution were presented today. Someone should present a specific resolution now.

Dr. Lee R. Woodward: An amendment has to lay over only one day. If it were presented at the first meeting, it could be acted on at the final meeting.

The Speaker: That would only make a delay of one year.

Dr. Woodward: If you make the motion today, it would be voted on the first day of the meeting at the next session.

The Speaker: Yes.

Dr. Woodward: I think it would be advisable to leave this and have it presented the first day of next year, and then voted on at the final meeting.

Dr. Downing: Mr. Speaker, in order to get this thing straightened out, for the benefit of the residents that are now serving, I will *move* that the House of Delegates recommend to the Trustees that residents' dues be waived, or be a very minimum for this year.

The Speaker: I don't believe, in accordance with the provisions of our constitution and by-laws, that it is within the province of this House to pass such a resolution at this time, because it would have to be presented at one session and lay over until the next session. The simplest way to handle this and the only way I see possible now would be to have it lay over until the first session of the next meeting. That is my interpretation of the by-laws as they are at present.

Dr. Downing: Is it against the policy of this House to recommend to the Board of Trustees?

The Speaker: It is perfectly in order to recommend but it wouldn't be in effect that the Trustees could authorize it. It would have to be acted on by the House, because that comes under the classes of membership and dues provisions in the constitution.

Dr. Downing: Mr. Speaker, I will *withdraw* the whole motion.

Dr. R. D. Bernard: Mr. Speaker, I *move* that we request no dues from these residents until the House of Delegates has an opportunity to act upon it next year.

The motion was seconded.

Dr. Shaw: I just question whether there might not be something done, when I read over the by-laws. The by-laws say, under Assessments and Expenditures:

"A per capita assessment as authorized by the House of Delegates on the membership of the component societies is hereby made the annual dues of this Society. This assessment shall be prorated . . ."

I am not sure whether that per capita assessment has to be equalized on everybody, or whether the House of Delegates could authorize the Board

of Trustees to assess against residents a dues of \$1 as a token dues, without a change in the by-laws, because this does not say that everybody has to be on the same basis.

The Speaker: I think Dr. Bernard's motion is in order and will take care of it properly for the time between now and the next session.

Dr. Bernard's motion was that the House of Delegates recommend that there be no dues or assessment made on residents until the House can act on this officially at the first regular meeting next year. Is that right?

Dr. Bernard: Yes.

Dr. Walter A. Sternberg: Speaking as a member of the Board of Trustees—during the war we carried all the boys in service and collected no dues whatever from them. It seems to me that if we had that privilege, we could admit these boys to membership and waive their dues, according to Sam's motion. I think that would be the thing to do, because residents do not have any money. They should not be compelled to pay the dues. When they get out into practice, they are members of the Society, and then they are going to start to pay the dues. It seems to me if you would authorize the Board of Trustees to waive their dues while they are serving legitimate residencies in the different hospitals, that would be the proper manner in which to handle it.

The Speaker: The motion made by Dr. Bernard takes care of it until the next session.

Dr. Sternberg: That is the reason I am speaking for Dr. Bernard's motion. I think it should be carried.

The Speaker: All in favor of the motion signify by the usual sign; contrary the same. *The motion is carried.*

Is there any further new business to come up at this time? If not, the announcement of committee appointments is the next order of business.

The Secretary: The following standing committees have been appointed by the Speaker, for ratification by the House.

STANDING COMMITTEES

CONSTITUTION AND BY-LAWS

John H. HenkinSioux City
John D. ConnerNevada
Don F. RodawigSpirit Lake

FINANCE

E. C. McClureBussey
A. S. BowersOrient
A. J. GantzGreenfield

LEGISLATION

J. W. BillingsleyNewton
L. A. CoffinFarmington
C. W. LoshDes Moines

MEDICOLEGAL

F. A. ElyDes Moines, 1950
L. K. MeredithDes Moines, 1949

MEDICAL EDUCATION AND HOSPITALS

G. H. ScanlonIowa City
R. F. BirgeDes Moines
J. V. TreynorCouncil Bluffs

MEDICAL SERVICE AND PUBLIC RELATIONS

Fred SternagelWest Des Moines
Martin I. OlsenDes Moines
R. D. BernardClarion
C. T. MaxwellSioux City
R. C. GutchChariton
D. C. ConzettDubuque
E. E. ShawIndianola
H. E. StroyOsceola
F. A. HennessyCalmar

SPECIAL COMMITTEES

BALDRIDGE-BEYE MEMORIAL

J. W. AgnewDavenport
M. FowlerIowa City
E. D. WarnerIowa City

CANCER

E. D. PlassIowa City, Chairman
A. W. ErskineCedar Rapids, Co-chairman
H. W. MorganMason City
E. G. ZimmererDes Moines
E. A. FullgrabeSioux City
D. F. WardDubuque
V. W. PetersenClinton
W. H. BeaumontCouncil Bluffs
John RankinKeokuk
W. J. BalzerDavenport
S. F. SingerOttumwa
J. C. HillNewton
A. L. JenksDes Moines

FRACTURE

C. O. AdamsMason City
F. L. KnowlesFort Dodge
F. G. OberBurlington
L. R. MartinCouncil Bluffs
L. J. MiltnerDavenport
E. B. HoevenOttumwa
L. M. OvertonDes Moines
D. N. GibsonDes Moines

HISTORICAL

Walter L. BierringDes Moines
Henry G. LangworthyDubuque
C. A. HenryFarson
C. L. JonesGilmore City
L. C. KernWaverly

INDUSTRIAL HEALTH

Clark N. CooperWaterloo
C. B. MeffertCedar Rapids
D. S. EgbertFort Dodge
G. M. CrabbMason City
S. F. SmazalDavenport

MATERNAL AND CHILD HEALTH

H. E. FarnsworthStorm Lake
R. H. McBrideSioux City
L. F. HillDes Moines
C. P. PhillipsMuscatine
H. A. WeisDavenport
J. F. GerkenWaterloo
R. M. CollinsCouncil Bluffs
R. O. HughesOttumwa

SCIENTIFIC EXHIBITS

L. M. OvertonDes Moines
F. C. ColemanDes Moines
John K. StewartClinton
W. H. GibbonSioux City
L. W. ThompsonAtlantic

SPEAKERS BUREAU

J. B. PriestleyDes Moines
A. A. SchultzFort Dodge
R. N. LarimerSioux City
B. F. WolvertonCedar Rapids
L. C. HickersonBrooklyn

TUBERCULOSIS

J. C. Painter	Dubuque
J. C. Parsons	Des Moines
R. J. Harrington	Sioux City
L. J. Galinsky	Des Moines
R. E. Smiley	Mason City
D. R. Webb	Cedar Rapids

Chairman of Medical Section

A. D. Woods, State Center

Chairman of Surgical Section

G. C. Blome, Ottumwa

Chairman of Eye, Ear, Nose and Throat Section

C. A. Noé, Cedar Rapids

The Secretary: To bring this before the House, I move that these appointments be approved by the House.

Dr. Gardner: I *second* the motion.

The motion was put to a vote and carried.

The Speaker: Is Dr. Reeder in the House? Will two of you gentlemen escort Dr. Reeder to the platform?

Past Presidents Bierring and Burcham escorted President-Elect Reeder to the platform. The members arose and applauded.

Past President Bierring: As the oldest ex-President, I greet the newest one.

The Speaker: Gentlemen, your new President-Elect, Dr. Reeder!

President-Elect Reeder: Mr. Chairman, I want to say I certainly appreciate the highest honor that the Society can bestow on any of its members. I know that we have troubled waters ahead, the same as we have had the last few years, and probably worse. I also know we must be eternally vigilant. I probably can emphasize that by what one of my colleagues said. Shortly after the election of November 5, he said, "Well, now we have the Republicans in. We can forget about state medicine." The thought came to me that politicians are politicians, whether they are Republicans or Democrats. So, my final word is that we as a group and as individuals must be and continue to be eternally vigilant. I can only assure you that I will do my best. Thank you.

The Speaker: There being no further business to come before the House, it is now declared adjourned.

The meeting adjourned at nine-fifteen o'clock.

IOWA STATE MEDICAL SOCIETY

Officers and Committees, 1947-1948

President.....Harold A. Spilman, Ottumwa
 President-Elect.....James E. Reeder, Sioux City
 First Vice President.....Ben T. Whitaker, Boone
 Second Vice President.....Henry M. Pahlas, Dubuque
 Secretary.....John C. Parsons, Des Moines
 Treasurer.....James A. Downing, Des Moines

ALTERNATE DELEGATES TO A. M. A.

George C. Albright, Iowa City.....1948
 Ernest M. Kersten, Fort Dodge.....1948
 Ernest E. Shaw, Indianola.....1949

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First District—Leslie L. Carr, West Union.....1952
 Second District—Charles H. Cretzmeyer, Algona.....1948
 Third District—James B. Knipe, Armstrong.....1949
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 Sixth District—James C. Hill, Newton.....1952
 Seventh District—Harold A. Housholder, Winthrop.....1948
 Eighth District—Clyde A. Boice, Washington, Chairman....1949
 Ninth District—Roy C. Gutch, Chariton.....1950
 Tenth District—James G. Macrae, Creston.....1951
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 Lee R. Woodward, Mason City.....1949
 Walter A. Sternberg, Mount Pleasant.....1950

DELEGATES TO A. M. A.

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 George Braunlich, Davenport.....1948
 Gerald V. Caughlan, Council Bluffs.....1949

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†Ditto, Boyd L., Burlington
†Dixon, George L., Tucson, Arizona (L.M.)
†Doane, Grace O., Des Moines
†Dobias, Stephen G., Chelsea
†Dobson, Richard A., Sioux City
†Doering, Valentine T., Fort Madison
†Dolan, Henry F., Anamosa
†Dolan, Thomas R., Anamosa
†Doles, James W., Knoxville
†Dolmage, George F., Buffalo Center
†Donahue, James C., Centerville
†Donlan, Eugene V., Clinton
†Donnell, John W., Hudson
†Donohoe, Anthony P., Davenport
†Donohue, Edmund S., Sioux City
†Donovan, William H., Iowa City
†Doolen, Glen W., Denver, Colorado
†Doornink, William, Orange City
†Dorner, Ralph A., Iowa City
†Dorsey, Thomas J., Fort Dodge
†Doss, W. Norman, Leon
†Dowling, C. Dean, Waterloo
†Down, Howard I., Sioux City
†Downing, Arthur H., Des Moines
†Downing, James A., Des Moines
†Downing, Leroy M., Cedar Rapids
†Downing, Wendell L., LeMars
†Downs, Vernon S., Ottumwa
†Doyle, Joseph L., Sigourney
†Dressler, John B., Ida Grove
†Drew, Edward J., Des Moines
†Driver, Richard W., Waterloo
†Dulin, Evelyn H., Iowa City
†Dulin, John A., Sigourney
†Dulin, John W., Iowa City
†Dulin, Tarana J. G., Sigourney
†Duling, Raymond J., Sioux City
†Dulmes, Abraham H., Klemme
†Dunkel, George K., Fairfield
†Dunkelberg, Elmer I., Waterloo
†Dunlap, Wallace A., Des Moines
†Dunn, Francis C., Cedar Rapids
†Dunn, James, Davenport
†Durfue, Max L., Cedar Falls
†Dusdieker, Stanley W., Des Moines
†Dushkin, Milton A., Des Moines
†Dutton, Dean A., Van Horne
†Dvorak, Joseph E., Sioux City
†Dwyer, Bernard B., Preston
†Dwyer, Robert E., Clinton
†Dyson, James E., Des Moines
†Earl, Warren Z., Sioux City
†Ebersole, Francis F., Mount Vernon
†Edington, Frank D., Spencer
†Edmonds, Charles W., Sioux City
†Edwards, Charles V., Council Bluffs
†Edwards, Ralph R., Centerville
†Egan, Thomas J., Baneroff
†Egbert, Daniel S., Fort Dodge
†Egermayer, George W., Elliott
†Eggleston, Alfred A., Burlington
†Egloff, William C., Mason City
†Ehrenhaft, Johann L., Iowa City
†Eiel, John O., Osage
†Eiel, Merrill O., Osage
†Eller, Lancelot W., Kanawha
†Elliott, Olin A., Des Moines
†Elliott, Vance J., Knoxville
†Ellis, Coburn H., Webster City
†Ellis, Howard G., Des Moines
†Ellison, George M., Clinton
†Ellyson, Charles W., Waterloo
†Ellyson, Craig D., Waterloo
†Elvidge, George, Perry
†Ely, Francis A., Des Moines
†Emanuel, Dennis G., Ottumwa
†Emerson, Edward L., Muscatine
†Emmons, Marcus B., Clinton
†Engelmann, Andrew T., Sioux City
†Enna, Melchior D., Rock Rapids
†Ennis, Harry H., Decorah
†Ensley, Bruce, Shell Rock
†Entringer, Albert J., Dubuque
†Entz, F. Harold, Waterloo
†Ergenbright, Willard V., Iowa City
†Eriesson, Martin G., Cedar Falls
†Erskine, Arthur W., Cedar Rapids
†Ervans, Harold J., Davenport
†Evans, John G., New Hartford (L.M.)
†Evans, William I., Sac City
†Everall, Bruce B., Monona
†Evers, Alvin E., Emmetsburg
†Eversmeyer, Benjamin E., Muscatine
†Faber, Luke A., Dubuque
†Fagen, Rodney P., Des Moines
†Fail, Charles S., Jr., Adel
†Fallows, Howard D., Mason City (L.M.)
†Farlow, Charles T., Farnhamville
†Farnham, Alfred J., Traer
†Farnsworth, Harold E., Storm Lake
†Farnum, Earl P., Sibley
†Faust, John H., Manson
†Fee, Charles H., Denison
†Fee, Knight E., Toledo
†Feightner, Robert L., Fort Madison
†Fellows, Joseph G., Ames
†Fellows, Liberty E., Newton
†Felter, Allan G., Van Meter
†Fenstermacher, Robert C., Stanton
†Fenton, Charles D., Bloomfield
†Fenton, Robert L., Centerville
†Ferguson, John W., Newton
†Ferlie, Rudolph J., Carroll
†Field, George A., Des Moines
†Field, Grace E. W., Seattle, Washington
†Fields, Robert B., LaPorte City
†Fieseler, Walter R., Fort Dodge
†Files, Edward H., Cedar Rapids
†Fillenwarth, Floyd H., Charles City
†Finch, George H., Des Moines
†Findley, William J. K., Storm Lake (L.M.)

- †Fisch, Roman J., LeMars
 †Fisk, Charlotte, Des Moines
 †Fitzgerald, Joseph D., Sloan
 †Fitzpatrick, Dennis F., Iowa City
 †Fitzpatrick, Matthew R., Kansas City, Kansas
 †Flancher, Leon H., Des Moines
 †Flater, Norman C., Floyd
 †Fleck, Warren L., Des Moines
 †Fleischman, Abraham G., Des Moines
 †Flickinger, Roger R., Mason City
 †Flores, Rubin H., Iowa City
 †Floersch, Eugene B., Council Bluffs
 †Floyd, Mark L., Iowa City
 †Flynn, Charles H., Clarinda
 †Flynn, James R., Cedar Rapids
 †Flynn, Joseph E., Jr., New York, N. Y.
 †Foley, Fred C., Newell
 †Foley, Walter E., Davenport
 †Foltz, Eloise, G. Perry
 †Fordyce, Frank W., Des Moines
 †Foss, Robert H., Clinton
 †Foster, Jess W., Ankeny
 †Foster, Morgan J., Cedar Rapids
 †Foster, Samuel T., Adel
 †Foster, Warren H., Clinton
 †Foster, Wayne J., Cedar Rapids
 †Foulk, Frank E., Des Moines
 †Fourt, Arthur S., Melbourne
 †Fowler, Charles C., Lovilia
 †Fowler, Willis M., Iowa City
 †Fox, Charles I., Pella (L.M.)
 †Fox, Ray A., Charles City
 †Franchere, Chetwyn M., Mason City
 †Frank, Louis J., Sioux City
 †Frank, Owen L., Maquoketa
 †Franklin, George W., Jefferson
 †Fransco, Peter P., Ruthven
 †Fraser, James B., Des Moines
 †Fraser, John H., Monticello
 †Frech, Raymond F., Newton
 †Frederickson, Adolph R., Lansing
 †Freligh, Clarence N., Waucoma
 †French, Royal F., Marshalltown
 †French, Valiant D., Carson
 †Frey, Harry, Grinnell
 †Fritchen, Arthur F., Decorah
 †Fritz, Lafe H., Dubuque
 †Fry, Gerald A., Vinton
 †Fry, John L., Cedarville, Illinois
 †Fuerste, Frederick, Dubuque
 †Fullerton, Oscar L., Redding (L.M.)
 †Fullgrabe, Emil A., Sioux City
 †Furgerson, Lee B., Waterloo
 †Gaard, Rasmus R., Radcliffe
 †Gallinsky, Leon J., Des Moines
 †Gallagher, John P., Oelwein
 †Galloway, Milton B., Webster City
 †Galman, James J., Sheldon (L.M.)
 †Galvin, Robert J., Oelwein
 †Gamble, Robert A., Madrid
 †Gamet, Elmo E., Lamoni
 †Gann, Edward R., Des Moines
 †Gance, James O., Ogden
 †Gantz, Albert J., Greenfield
 †Ganzhorn, Harold L., Mapleton
 †Gardner, Harold O., Waterloo
 †Gardner, John R., Lisbon
 †Gardner, Paul E., New Hampton (L.M.)
 †Garside, Arthur A., Davenport
 †Garvy, Andrew C., Iowa City
 †Gasson, James H., Bedford
 †Gauger, John W., Early
 †Gaukel, Leo A., Onawa
 †Gearhart, George W., Springville
 †Gearhart, Merriam, Bethany, Missouri
 †Gee, Kenneth, Shenandoah
 †Geeseke, Otto A., Mount Pleasant (L.M.)
 †Gelfand, Arthur B., Sioux City
 †Gelfand, Ben B., Sioux City
 †Gelfand, Della G., Sioux City
 †George, Everett M., Des Moines
 †Gerard, Russell S., Waterloo
 †Gerken, J. Fred, Waterloo
 †Gernsey, Merritt N., Waverly
 †Gerstman, Herbert, Marion
 †Gessner, Frederick W., Dysart
 †Getty, Everett B., Pringhar
 †Gibbon, William H., Sioux City
 †Gibbs, George M., Burlington
 †Gibson, Chelsea D., Sac City
 †Gibson, Douglas N., Des Moines
 †Gibson, Paul E., Des Moines
 †Gibson, Preston E., Davenport
 †Giegerich, Walter F., Atlantic
 †Giffin, John S., Cedar Falls
 †Giles, Francis E., Cresco
 †Giles, George C., Oakland (L.M.)
 †Gilfillan, Bruce L., Keokuk
 †Gilfillan, Clarence D. N., Bloomfield
 †Gilfillan, Earl E., Bloomfield
 †Gilfillan, George W., Bloomfield
 †Gilfillan, Homer J., Jr., Bloomfield
 †Gilfillan, Homer J., Bloomfield (L.M.)
 Gillett, Francis A., Oskaloosa
 Gillies, Carl L., Iowa City
 Gillmor, Benjamin F., Red Oak
 †Gingles, Earl E., Onawa
 †Gittins, Thomas R., Sioux City
 †Gittler, Ludwig, Fairfield
 †Givens, Ezekiah F., West Bend
 †Glasscock, Thomas J., Hawarden
 †Glesne, Orvin G., Elkader
 †Glesne, Otto N., Fort Dodge
 †Gloeckler, Bernhard B., Hugo, Colorado
 †Glomset, Daniel A., Des Moines
 †Glomset, Daniel J., Des Moines
 †Glottelty, James S., Sheridan, Wyoming
 †Goad, Robley R., Muscatine
 †Goddard, Chester R., Guttenberg
 †Goebel, Clarence J., Sioux City
 †Goen, Edwin J., Charles City
 †Goenne, William C., Davenport
 †Goggin, John G., Ossian
 †Goldberg, Louie, Des Moines
 †Goltry, Charles P., Russell
 †Goodenow, Sidney B., Colo
 †Goodman, Lawrence O., Marshalltown
 †Gordon, Arnold M., Des Moines
 †Gorrell, Ralph L., Clarion
 †Gottlieb, Jacques S., Iowa City
 †Gottsch, Erwin J., Shenandoah
 †Gould, George R., Conrad (L.M.)
 †Gould, Isaac L., Des Moines
 †Gower, Walter E., Fort Dodge
 †Graber, Harold E., Fairfield
 †Graening, Charles H., Waverly (L.M.)
 †Graham, John A., Clinton
 †Graham, James W., Sioux City
 †Gran, Albert G., Storm Lake
 †Grandinetti, Arthur F., Oelwein
 †Grant, John G., Ames
 †Grau, Amandus H., Denison
 †Graves, Max D., Taunton, Massachusetts
 †Gray, Charles W., Oakdale
 †Gray, Henry A., Keokuk
 †Gray, John F., Melcher
 †Gray, Ralph E., Eldora
 †Greenblatt, Gerald, Cedar Rapids
 †Greenhill, Solomon, Des Moines
 †Greenlee, Max R., Oskaloosa
 †Greteman, Theodore J., Dubuque
 †Griffin, Clark C., Jr., Vinton (L.M.)
 †Griffin, Frank L., Baldwin
 †Griffin, John M., Des Moines
 †Griffin, Robert E., Sheldon
 †Griffin, Sarah M. F., Manson
 †Griffith, William O., Council Bluffs
 †Grobe, Elmer S., Columbus Junction
 †Groman, August, Odebolt (L.M.)
 †Gross, Erwin G., Iowa City
 †Grossman, Milton D., Sioux City
 †Grossman, Raymond S., Marshalltown
 †Grossmann, Edward B., Orange City
 †Grothaus, Dell L., Delta
 †Grubb, Merrill W., Galva
 †Gruenwald, Siegfried, Independence
 †Guessford, Howard H., George
 †Gunn, Ross E., Boone
 †Gurau, Henry H., Des Moines
 †Gutch, Roy C., Chariton
 †Gutch, Thomas E., Albion
 †Hage, Martin M., Lake Mills
 †Hagen, Edward F., Decorah
 †Haines, Diedrich J., Des Moines
 †Haisch, Lily K., Dubuque
 †Hale, Albert E., Mason City
 †Hall, Bonnybel A., Maynard
 †Hall, Cluley C., Maynard
 †Hall, Forest F., Webster City
 †Hallendorf, Leonard C., Muscatine
 †Halleran, William H., Audubon
 †Halpin, Lawrence J., Cedar Rapids
 †Hamilton, Benjamin C., Jefferson (L.M.)
 †Hamilton, Benjamin C., Jr., Jefferson
 †Hamilton, Cecil V., Garner
 †Hamilton, Harriett S., Council Bluffs
 †Hamilton, Henry H., Cedar Rapids
 †Hamstreet, Wilbur F., Titonka
 †Hanchett, W. McMicken, Council Bluffs
 †Hancock, John C., Dubuque (L.M.)
 †Hands, Sidney G., Davenport
 †Hankey, Daniel C., Council Bluffs
 †Hansell, William W., Des Moines
 †Hansen, Fred A., Red Oak
 †Hansen, Niels M., Des Moines
 †Hansen, Robert R., Marshalltown
 †Hansen, Russell R., Storm Lake
 †Hanson, Frank H., Magnolia
 †Hanson, Laurence C., Jefferson
 †Hardin, John F., Bedford
 †Hardin, Robert C., Iowa City
 †Hardwig, Oswald C., Waverly
 †Harken, Conrad R., Osceola
 †Harkness, Gordon F., Davenport
 †Harman, Clarence, Emerson
 †Harman, Dean W., Glenwood
 †Harms, George E., Norway
 †Harnagel, Edward J., Des Moines
 †Harp, John F., Newton (L.M.)
 †Harper, Edna K. S., Greenfield
 †Harper, George, Ft. Madison
 †Harper, Harry, Ft. Madison
 †Harper, William H., Keokuk
 †Harrington, Arlan F., Cedar Rapids
 †Harrington, Raymond J., Sioux City
 †Harris, Clinton E., Grinnell
 †Harris, D. Dale, Marshalltown
 †Harris, Grove W., Marshalltown
 †Harris, Herbert H., Battle Creek
 †Harris, Jack T., Luverne
 †Harris, Ray R., Dubuque
 †Hartley, Byron D., Mount Pleasant
 †Hartman, Frank T., Waterloo (L.M.)
 †Hartman, Howard J., Waterloo
 †Hartsaw, John E., Sigourney
 †Hartung, Walter, Davenport
 †Harwood, Arthur M., Hedrick
 †Hastings, John C., Elma
 †Havlik, Aloysius J., Tama
 †Hawkins, Emmet L., Council Bluffs
 †Hawley, Olin B., Corning
 †Hayek, John M., Des Moines
 †Hayes, William P., Cedar Rapids
 †Hayne, Willard W., Des Moines
 †Hayworth, Ballard, Sioux Rapids
 †Hazlet, Kenneth K., Dubuque
 †Heady, Conda C. C., Bloomfield (L.M.)
 †Heald, Clarence L., Sigourney
 †Healy, Maurice A., Boone
 †Healy, Maurice J., Boone
 †Heathman, Frank E., Pocahontas (L.M.)
 †Hebel, Herbert D., Iowa City
 †Hebert, William S., Iowa City
 †Hecker, John T., Cedar Rapids
 †Heetland, Louis H., Sibley (L.M.)
 †Heffernan, Chaucey E., Sioux City
 †Hegg, Lester R., Rock Valley
 †Heilman, Elwood H., Ida Grove
 †Heise, Carl A., Missouri Valley
 †Heise, Carl A., Jr., Jewell
 †Heitzman, Paul O., Cedar Rapids
 †Heles, John B., Dubuque
 †Henderson, Lauren J., Cedar Falls
 †Henderson, Walker B., Oelwein
 †Hendrickson, Alvin H., Sioux City
 †Henely, Edmund, Nora Springs
 †Henkin, John H., Sioux City
 †Hennes, Raphael J., Oxford
 †Hennessy, Felix A., Calmar
 †Hennessy, J. Donald, Council Bluffs
 †Hennessy, John M., Manilla
 †Henry, Clyde A., Parson (L.M.)
 †Henry, Hiram B., Des Moines
 †Henstorf, Harold R., Shenandoah
 †Herman, John C., Boone
 †Hermesen, Paul J., Bronson
 †Herny, Peter M., Prairie City
 †Herrick, Thomas G., Gilmore City
 †Herrick, Walter E., Ottumwa
 †Herrmann, Christian H., Jr., Amana
 †Hersch, Thomas F., Cedar Rapids
 †Hersey, Nelson L., Independence
 †Hess, Ardo M., West Union
 †Hess, John Jr., Des Moines
 †Hess, William C., Cresco
 †Heusinkveld, Henry J., Jr., Clinton
 †Hickenlooper, Carl B., Winterset
 †Hickerson, Luther C., Brooklyn
 †Hickman, Charles S., Centerville
 †Hicks, Wayland K., Sioux City
 †Hight, William B., Des Moines
 †Hildebrand, Howard H., Ames
 †Hill, Christine S. E., Council Bluffs
 †Hill, Don E., Clinton
 †Hill, James C., Newton
 †Hill, James W., Mount Ayr
 †Hill, Lee F., Des Moines
 †Hills, Henry M., Lamoni (L.M.)
 †Hills, Robert A., Russell
 †Hobart, Francis W., Lake City
 †Hoeven, Edward B., Ottumwa
 †Hoffman, George R., Iowa City
 †Hoffman, Paul M., Tipton
 †Hoffman, Robert W., Des Moines
 †Hoffmann, Alfred A., Waterloo
 †Hoffmann, William F., Davenport
 †Hogshead, George W., Ames
 †Hogshead, Ralph Jr., Ames
 †Hollis, Edward L., Marengo
 †Holman, Henry D., Mason City
 †Holmes, Wilson W., Keokuk
 †Holtey, Joseph W., Ossian
 †Homan, Leo J., Oxford Junction
 †Hombach, Walter F., Council Bluffs
 †Hombach, William P., Council Bluffs (L.M.)
 †Hommel, Placido R. V., Elkader
 †Honke, Edward M., Sioux City
 †Hooper, Lester E., Indianola
 †Hopkins, David H., Glidden
 †Hornaday, William R., Des Moines

- †Horton, Vincent J., Calmar (L.M.)
 †Hosford, Horace F., Burlington
 †Hospodarsky, Leonard J., Ridgeway
 Hotz, Edward J., Iowa City
 †Houghton, Earl J., Bettendorf
 †Houlahan, Jay E., Mason City
 †Houlihan, Francis W., Ackley
 †Houlihan, Thomas J., Ida Grove (L.M.)
 †Houser, Blanche W., Cedar Rapids
 †Houser, Cass T., Cedar Rapids
 †Housholder, Harold A., Winthrop
 †Houston, Bush, Nevada
 †Howar, Bruce F., Webster City
 †Howard, Lloyd G., Council Bluffs
 †Howell, Elias B., Ottumwa
 †Howland, Charles F., Des Moines
 †Hruska, Glen J., Belmont
 *Hubbard, Frank A., Columbus Junction (L.M.)
 †Huber, Robert A., Charter Oak
 †Hudek, Joseph W., Garnaville
 †Hudson, Jessie B., Hampton
 †Huffman, William C., Iowa City
 †Hughes, Parker K., Des Moines
 †Hughes, Robert O., Ottumwa
 †Hull, Henry C., Washington (L.M.)
 †Hulse, Charles A., Iowa City
 †Hulse, Roy A., Burlington
 †Hunting, Ralph D., Cedar Rapids
 †Huntley, Charles C., Avoca
 †Hurevitz, Hyman M., Davenport
 †Huston, Daniel F., Burlington
 †Huston, Herbert M., Ruthven (L.M.)
 †Huston, Marshall D., Cedar Falls
 †Huston, Paul E., Iowa City
 †Huston, Samuel W., Mount Pleasant
 †Hyatt, Charles N., Albia (L.M.)
 †Hyatt, Charles N., Jr., Humeston
 †Ide, Lucien W., Iowa City
 †Ihle, Charles W., Cleghorn
 †Ingham, Paul G., Mapleton
 †Ingraham, David R., Sewal
 †Irish, Thomas J., Forest City
 †Irving, Noble W., Des Moines
 †Isenberg, Bertice A., Lohrville
 †Jackson, James M., Jefferson
 †Jackson, James S., Mount Pleasant
 †Jacobs, Carl A., Sioux City
 †Jacoby, James A., Burlington
 †Jacques, Lewis H., Lone Tree
 †Jaenicke, Kurt, Clinton
 †James, Audra D., Des Moines
 †James, David W., Des Moines
 †James, Lora D., Fairfield
 †James, Peter E., Elk Horn
 ★James, Roger A., Allison
 †Jameson, Robert E., Davenport
 †Janse, Phillip V., Algona
 †January, Lewis E., Iowa City
 †Jardine, George A., New Virginia
 †Jarvis, Fred J., Oskaloosa
 †Jarvis, Harry D., Chariton
 †Jaskunas, Stanley R., Bloomfield
 †Jeans, Philip C., Iowa City
 †Jeffries, Roy R., Waukon
 †Jenkins, George A., Albia
 †Jenkins, George D., Burlington
 †Jenkinson, Harry E., Iowa City
 †Jenks, Alonzo L., Jr., Des Moines
 †Jensen, Arnold L., Inglewood, California
 †Jensen, Arthur E., Humboldt
 †Jensen, Leroy E., Audubon
 †Jerdee, Ingebrecht C., Clermont
 †Jessup, Parke M., Muscatine
 †Jinderlee, Joseph W., Cresco
 †Jirsa, Harold O., Iowa City
 †Johann, Albert E., Des Moines
 †Johnson, Aaron Q., Sioux City
 †Johnson, Albert P., Sigourney (L.M.)
 †Johnson, Aldis A., Council Bluffs
 †Johnson, Amos F., Manilla
 †Johnson, Chester H., Cherokee
 †Johnson, Clarence A., Coon Rapids
 †Johnson, George M., Marshalltown
 †Johnson, G. Raymond, Ottumwa
 †Johnson, Harvey A., Atlantic
 †Johnson, J. A. William, Marshalltown
 †Johnson, Jonathan, Alden
 †Johnson, Norman M., Clarinda
 †Johnson, Robert J., Iowa Falls
 †Johnson, Robert W., Clinton
 †Johnson, William A., Iowa Falls
 †Johnston, C. Harlan, Des Moines
 †Johnston, Florence D., Cedar Rapids
 †Johnston, George B., Estherville
 †Johnston, Harry L., Ames
 †Johnston, Helen, Des Moines
 †Johnston, Howard H., Hampton
 †Johnston, Kenneth L., Oskaloosa
 †Johnston, Wayne A., Dubuque
 †Johnstone, Alexander A., Keokuk
 †Jones, Cecil C., Des Moines
 †Jones, Charles L., Gilmore City
 †Jones, Clare C., Spencer
 †Jones, Harry J., Cedar Rapids
 †Jones, Lewis H., Wall Lake (L.M.)
 †Jones, Thomas S., Waukee
 †Jongewaard, Albert J., Jefferson
 †Jongewaard, Jeanette, Jefferson
 †Jordan, Carl F., Des Moines
 †Jordan, John W., Maquoketa
 †Jowett, John R., Clinton
 †Joynt, Albert J., Waterloo
 †Joynt, Martin J., LeMars
 †Joynt, Michael F., Marcus
 †Junger, Emil C., Soldier
 †Kaack, Harry F., Clinton
 †Kaack, Harry F., Jr., Clinton
 †Kahler, Hugo V., Reinbeck
 †Kane, Thomas E., Boone
 †Kanealy, John F., Cedar Rapids
 †Kapke, Franklin W., Mason City
 †Kaplan, David D., Sioux City
 †Kas, Thomas D., Sutherland
 †Kassmeyer, John C., Dubuque
 †Kast, Donald H., Des Moines
 †Katherman, Charles A., Sioux City
 †Katzenstein, William S., Minden
 †Katzmann, Frederick S., Des Moines
 †Kauffman, William A., Marshalltown
 †Kaufman, Ernest L., Fort Atkinson
 †Keane, Kenneth M., Sioux City
 †Keech, Roy K., Cedar Rapids
 †Keen, Burlin E., Des Moines
 †Keeney, George H., Mallard
 †Keetell, William C., Jr., Iowa City
 †Keil, Philip G., Des Moines
 †Keith, Charles W., Strawberry Point
 †Keith, John J., Marion
 †Kelberg, Melvin R., Sioux City
 †Kelley, Edmund J., Des Moines
 †Kelley, Lawrence E., Des Moines
 †Kelly, Dennis H., Des Moines
 †Kelly, John F., Sioux City
 †Kelly, Joseph I., Burlington (L.M.)
 †Kenefick, John N., Algona
 †Kennedy, Edward P., Swaledale
 †Kennedy, Elizabeth S., Oelwein
 †Kennedy, William C., Somers
 †Keohen, Gerald F., Dubuque
 †Kern, Lester C., Waverly (L.M.)
 †Kerr, H. Dabney, Iowa City
 †Kerr, Harper, Akron
 †Kerr, Johnstone H., Akron
 †Kerr, William, Randolph
 †Kerr, William H., Hamburg
 †Kershner, Frank O., Clinton
 †Kersten, Ernest M., Fort Dodge
 †Kersten, Paul M., Fort Dodge
 †Kerwick, Joseph M., New Hampton
 †Kessell, James E., Des Moines
 †Kestel, John L., Waterloo
 †Kettelkamp, Enoch G., Monona
 †Keyser, Earl L., Marshalltown
 †Keyser, Ralph E., Marshalltown
 †Kieck, Ernest G., Cedar Rapids
 †Kiesau, Frederick W., Postville
 †Kiesau, Milton F., Postville
 †Kiesling, Harry F., Lehigh
 †Kilgore, Benjamin F., Des Moines
 †Kimball, John E., West Liberty
 †Kimberly, Lester W., Davenport
 †King, David H., Batavia
 †King, Dean H., Spencer
 †King, Harold N., Hampton, Virginia
 †King, Oran W., Des Moines
 †King, Ross C., Clinton
 †Kingsbury, Charles L., Keokuk
 †Kingsbury, Earl L., Keokuk
 †Kirch, Walter A. W., Des Moines
 †Kirkegaard, Smith C., Estherville
 †Kitson, Walter W., Atlantic
 †Klein, John L., Muscatine (L.M.)
 †Klein, John L., Jr., Muscatine
 †Kleinberg, Henry E., Des Moines
 †Kline, Samuel, Sioux City
 †Klocksie, Harold L., Des Moines
 †Klocksie, Roy G., Rockwell City
 †Klok, George J., Council Bluffs
 †Kluver, Herman C., Fort Dodge
 †Knight, Benjamin L., Cedar Rapids
 †Knight, Edson C., Marshalltown
 †Knight, Russell A., Rockford
 †Knipe, James B., Armstrong
 †Knipfer, Robert L., Jesup
 †Knoll, Albert H., San Francisco, California
 †Knott, Peirce D., Sioux City
 †Knowles, Fred L., Fort Dodge
 †Knox, James M., Cedar Rapids
 †Knudsen, Hubert K., Clinton
 †Koch, George W., Anaheim, California (L.M.)
 †Koester, John F., Des Moines
 †Koontz, Lyle W., Vinton
 †Korfmaier, Edwin S., Grinnell
 †Kornder, Louis H., Davenport
 †Korns, Horace M., Dubuque
 †Koser, Donald C., Cherokee
 †Krakauer, Adolf, Clarinda
 †Krakauer, Max, Davenport
 †Krause, Charles S., Cedar Rapids
 †Krejsa, Oldrich, Cedar Rapids
 †Krenning, Katherine S., Los Angeles, California
 †Krepelka, George E., Osage
 †Krettek, John, Council Bluffs
 †Kreul, Dwight G., Davenport
 †Kriebs, Frank J., Elkport (L.M.)
 †Kriebbaum, Horace T., Davenport
 †Krigsten, Joe M., Sioux City
 †Krigsten, William M., Sioux City
 †Kruckenberg, William G., Cedar Rapids
 †Kruml, Joseph G., Council Bluffs
 †Kuhl, Augustus B., Davenport
 †Kuhl, Augustus B., Jr., Davenport
 †Kuhn, Leo C., Decorah
 ★Kuitert, John H., Denver, Colorado
 †Kulp, Raymond R., Davenport
 †Kurtz, Cecilia M., Cedar Rapids
 †Kyle, William S., Washington
 †Labagh, Nicholas W., Mystic
 †LaDage, Leo H., Davenport
 †Ladd, Fred G., Cedar Rapids (L.M.)
 †LaForce, Edward F., Burlington (L.M.)
 †Laidley, Wallace G., Ogden
 †Lamb, Frederick H., Davenport
 †Lamb, Harry H., Davenport
 †Lambach, Frederick, Davenport (L.M.)
 †Lampe, Elmer L., Bellevue
 †Lande, Jacob N., Sioux City
 †Langford, William R., Cedar Rapids
 †Langworthy, Henry G., Dubuque
 †Lannon, James W., Mason City
 †Larimer, Robert N., Sioux City
 †Larsen, Elmer A., Centerville
 †Larsen, Frank S., Fort Dodge
 †Larsen, Harold T., Fort Dodge
 †Larson, Andrew G., Dickens
 †Larson, Lester E., Decorah
 †Larson, Marvin O., Hawarden
 †Latchem, Charles W., Des Moines
 †LaTona, Joseph H., Des Moines
 †Laughlin, Ralph M., Cedar Rapids
 †Lauder, Frank T., San Diego, California (L.M.)
 †Lavender, John G., George
 †Lawler, Jeremiah F., Cherokee
 †Lawrence, Joseph W., Dubuque
 †Layton, Jack M., Iowa City
 †Lease, Nimrod J., Crawfordville (L.M.)
 †Lee, Gisle M., Thompson (L.M.)
 †Lee, Robert W., Algona
 †Lee, Wayne R., Burlington
 †Leehey, Paul J., Independence
 †Leffert, Frank B., Centerville
 †Lehman, Emery W., Des Moines
 †Lehr, Sylvan M., Cedar Rapids
 †Leighton, Lewis L., Fort Dodge
 †Leinbach, Samuel P., Belmont
 †Leinfelder, Placidus J., Iowa City
 †Leiter, Herbert C., Sioux City
 †Leith, George G., Wilton Junction
 †Lekwa, Alfred H., Story City
 †LeMar, Clair L., Dow City
 †Lemon, Kenneth M., Oskaloosa
 †Lenaghan, Robert T., Clinton
 †Lenzmeier, Albert J., Davenport
 †Leonard, Earl R., Marcus
 †Leonard, Frederick S., Dubuque
 †Lessenger, Ernest J., New London
 †Levin, Harry M., Waterloo
 †Levin, Stanley L., Des Moines
 †Lewis, E. Faye C., Webster City
 †Lewis, William B., Webster City
 †Lichter, Theodore W., Edgewood
 †Lierle, Dean M., Iowa City
 †Lierman, Clifford E., Lake View
 †Liken, John A., Creston
 †Limbert, Edwin M., Council Bluffs
 †Limburg, J. Irwin, Jefferson
 †Limburg, John I., Jr., Jefferson
 †Lincoln, Simon E., Des Moines
 †Lindholm, Hugo, Armstrong
 †Lindsay, Vernard T., Glidden
 †Linn, Ellis G., Des Moines (L.M.)
 †Liska, Edward J., Ute
 †Lister, Kenneth E., Minneapolis, Minnesota
 †Little, Luther W., Atkins
 †Lloyd, John M., Washington
 †Locher, Robert C., Cedar Rapids
 †Lock, Arthur L., Rock Valley
 †Lockhart, Harold A., Cedar Rapids
 †Loeck, John F., Independence
 †Loes, Anthony M., Dubuque
 †Lohman, Frederick H., Waterloo
 †Lohmann, Carl J., Burlington
 †Lohr, Phillips E., Churdan
 †Loizeaux, Charles E., Dubuque
 †Long, Draper L., Mason City
 †Longworth, Wallace H., Boone

- †Loomis, Frederic H., Waterloo
 †Loosbrock, John F., Perry
 Loose, David N., Maquoketa (L.M.)
 †Lorfeld, Gerhard W., Davenport
 †Losh, Clifford W., Des Moines
 Losh, Clifford W., Jr., Des Moines
 Lott, Robert H., Carroll
 †Love, Francis L., Iowa City
 †Lovejoy, E. Parish, Des Moines
 Lovelady, Ralph, Sidney
 Lovett, Charles E., Lineville
 †Lovett, Earl D., Vinton
 †Loving, Luther W., Estherville
 Lowry, Frederick C., Iowa City
 †Lueck, Arthur G., Des Moines
 Luehrsmann, Bernard C., Dyersville
 Luehrsmann, Bernard H., Dyersville
 †Luginbuhl, Christian B., Des Moines
 Luke, Edward, Coin
 †Lundvick, Arthur W., Gowrie
 †Luse, Ralph F., Clinton
 †Lutton, John D., Sioux City
 †Lynch, Robert J., Des Moines
 †Lynn, Arthur R., Marshalltown
 Lynn, Clarence E., Dubuque
 Lytle, Carl C., Dubuque
 MacEwen, Ewen M., Iowa City
 Mackin, M. Charles, Des Moines (L.M.)
 †MacLeod, Hugh G., Greene
 †MacNaughton, Luther D., Eagle Grove
 †Macrae, James G., Creston
 †Magaret, Ernest C., Glenwood
 †Magee, Emery E., Waterloo
 Maguire, Leo M., Des Moines
 Mahin, Frank M., Washington (L.M.)
 Mahoney, James D., Council Bluffs
 Mailliard, Robert E., Storm Lake
 Maland, Donald O., Cresco
 †Maloy, Wayland H., Shenandoah
 Mantle, William B., Albion
 Mantz, Russell L., Cedar Rapids
 †Maplethorpe, Charles W., Toledo
 †Marble, Edwin J., Marshalltown
 †Marble, Ira A., Sheffield
 Marble, Pearl L., Liscomb
 †Marble, Willard P., Marshalltown
 Marek, Joseph E., Mason City (L.M.)
 Maresh, George, Boise, Idaho
 Maresh, Gerald S., Iowa City
 †Marinos, Harry G., Mason City
 †Maris, Cornelius, Sanborn
 Maris, Gerrit, Hull
 †Maris, William, Sioux Center
 †Mark, Edward M., Clarksville
 †Marker, John I., Davenport
 ★Marquis, Fred M., Waterloo
 †Marquis, George S., Des Moines
 †Marsh, Elinor, Council Bluffs
 †Marsh, Frederick E., Council Bluffs
 Martin, James W., Holstein
 Martin, John F., Latimer
 Martin, Joseph R., Carroll
 †Martin, Lee R., Council Bluffs
 †Martin, Loran M., Fort Dodge
 †Martin, Ronald F., Sioux City
 Martin, Sidney D., Carroll
 †Mason, Robert P., Des Moines
 Mason, Stella M., Mason City (L.M.)
 Masson, Hervey F., Washington
 †Mast, Truman M., Washington
 †Mater, Dwight A., Knoxville
 †Mater, Roy V., Knoxville
 Matheson, John H., Des Moines
 Mathias, John P., Mediapolis (L.M.)
 †Mathiasen, Aileen E., Council Bluffs
 †Mathiasen, Henning W., Council Bluffs
 †Mathiasen, John W., Council Bluffs
 †Matthews, Robert J., Clarinda
 †Matthey, Carl H., Davenport
 †Matthey, Walter A., Davenport
 Mattice, Lloyd H., Sheldon
 †Mauer, George A., LeMars
 †Mauritz, Emory L., Des Moines
 †Maxwell, Charles T., Sioux City
 †Maxwell, John, What Cheer
 †May, George A., Des Moines
 McAllister, James, Odebolt
 McBride, James T., Des Moines (L.M.)
 †McBride, Robert H., Sioux City
 McBurney, George F., Belmond
 †McCaffrey, Eugene H., Des Moines
 McCall, John H., Allerton
 †McCann, John P., Marshalltown
 †McCarl, J. Jay, Sac City
 †McCarthy, Frank D., Sioux City
 †McCartney, William H., Des Moines
 †McClean, Earl D., Des Moines
 †McClintock, John T., Iowa City (L.M.)
 †McClure, Ernest C., Bussey (L.M.)
 †McClure, Gail A., Ames
 †McClurg, F. Haven, Fairfield
 †McConkie, Edwin B., Cedar Rapids
 †McConkie, Willis L., Carroll
 McConnaughey, James T., Mount Pleasant (L.M.)
 (L.M.)
 †McCoy, Harold J., Des Moines
 McCrae, Eppie S., Eddyville (L.M.)
 †McCreedy, Murry L., Washington
 †McCreery, John W., Whittemore
 †McCreight, George C., Des Moines
 †McCuiston, Harry M., Sioux City
 †McCullough, John H., Waukon
 †McDaniel, John D., Marengo
 McDonald, Donald J., Cedar Rapids
 †McDonald, James E., Mason City (L.M.)
 McDowall, Gilbert T., Gladbrook
 McDowell, William O., Grundy Center
 †McElderry, Donald, Princeton
 †McFarland, Guy E., Ames
 †McFarland, Guy E., Jr., Ames
 †McFarland, Julian E., Ames
 †McGill, Arthur A., Danbury
 †McGilvra, Arthur L., Sioux Center
 †McGrane, Merle J., New Hampton
 †McGready, Joseph H., Independence (L.M.)
 †McGuire, Kenneth L., Keota
 †McGuire, Roy A., Fairfield
 †McHugh, Charles P., Sioux City
 McIntyre, Caryl C., Waterloo
 †McKean, Frank F., Allison
 McKee, Thomas L., Ft. Lauderdale, Florida
 McKirahan, Josiah R., Wayland
 McKitterick, John C., Burlington
 †McLaughlin, Charles W., Washington (L.M.)
 †McMahon, Thomas, Garner (L.M.)
 McManus, Joseph P., Graettinger
 †McMeans, Thomas W., Davenport
 †McMillen, Arch S., Fort Dodge
 McMullen, Jane, Des Moines
 †McMurray, Edward A., Newton
 McNamara, Robert J., Lake City
 †McNamee, Jesse H., Des Moines
 †McPherrin, Henry I., Des Moines
 †McQuiston, J. Stuart, Cedar Rapids
 †McTaggart, William B., Fort Dodge
 †McVay, Melvin J., Lake City
 †Mead, Frank N., Cedar Falls (L.M.)
 Meany, John F., Rockwell
 Meentz, Diedrich J., Fort Madison
 Meffert, Clyde B., Cedar Rapids
 †Meggers, Edward C., McGregor
 †Megorden, William H., Mount Pleasant
 Mehler, Frank R., New London
 †Melgaard, Bennett A., Sioux City
 †Mellen, Robert G., Clinton
 †Meredith, Loren K., Des Moines
 Mereness, Herbert D., Dolliver
 †Merrill, Herbert C., Des Moines
 †Merkel, Arthur E., Des Moines
 †Merkel, Byron M., Des Moines
 Merrill, Charles H., Oskaloosa
 Merritt, Arthur M., Des Moines
 Merselis, Harold K., Audubon
 †Mershon, Clinton E., Adel (L.M.)
 Meyer, Alfred K., Old Hickory, Tennessee
 Meyer, Valentine J., Glenwood
 Meyers, Frank W., Dubuque
 †Meyers, Henry A., Davenport
 Michel, Bernard A., Dubuque (L.M.)
 Mieras, Marion, LeMars
 †Mikelson, Clarence J., Waterloo
 Miller, Brownlow B., Tabor
 Miller, C. Dudley, Denison
 Miller, Chester L., Iowa City
 †Miller, Donald F., Williamsburg
 †Miller, Enos D., Wellman
 †Miller, Howard L., Cedar Rapids
 †Miller, Jay R., Wellman
 †Miller, Lawrence A., North English
 †Miller, Temple M., Muscatine
 Miller, Wilbur R., Iowa City
 †Miller, William B., Centerville
 †Millice, Glenn S., Battle Creek
 Millikan, Clark H., Iowa City
 Mills, Frank W., Ottumwa (L.M.)
 †Miltner, Leo J., Davenport
 †Minassian, Harootune A., Des Moines (L.M.)
 Minassian, Thaddeus A., Des Moines (L.M.)
 †Miner, James B., Jr., Charles City
 †Miner, James B., Sr., Charles City (L.M.)
 †Minkel, Roger M., Fort Dodge
 †Missman, Walter F., Fort Dodge
 †Missman, Walter F., Klemme
 †Mitchell, Claire H., Indianola
 Moen, Stanley T., Iowa City
 Moerke, Robert F., Burlington
 †Moershel, Henry G., Homestead
 Moes, Matthew J., Dubuque
 Moffatt, Thomas W., Dubuque
 Mol, Henry L., Grundy Center
 †Montgomery, Guy E., Washington
 Montz, Fred, Lowden
 †Moon, Barclay J., Cedar Rapids
 Mooney, James C., Des Moines
 Moore, Daniel V., Sioux City
 Moore, Edson E., Fort Dodge
 Moore, Gage C., Ottumwa
 Moore, Harold H., Ottumwa
 Moore, Jesse C., Eldon
 †Moore, Pauline V., Iowa City
 †Moorehead, Harold B., Underwood
 †Moran, Thomas A., Melrose
 †Mordaunt, Richard H., Nevada
 †Morgan, Earl E., Sioux City
 Morgan, Fred B., Clinton
 †Morgan, Harold W., Mason City
 Morganthaler, Otis P., Templeton
 Moriarty, John F., Rock Rapids
 †Moriarty, Lauren R., Villisca
 Morris, Zenella N., Stockport (L.M.)
 Morrison, Edward D., Fort Dodge
 Morrison, John R., Carroll
 Morrison, John W., Alta
 Morrison, Roland B., Carroll
 Morrison, Wesley J., Cedar Rapids (L.M.)
 Morrissey, George E., Davenport
 ★Morrisey, William J., Tacoma, Washington
 Morris, Charles H., Eagle Grove (L.M.)
 †Morton, Elmer E., Manning
 †Morton, Matthew T., Estherville
 †Moshier, Martin L., Jr., Iowa City
 Mott, William H., Farmington
 Mountain, Elmer B., Des Moines
 †Mountain, George E., Des Moines
 Mueller, Emil F., Dyersville
 †Muench, Virgil O., Nichols
 †Mugan, Robert C., Sioux City
 †Mullmann, Arnold J., Perry
 †Mulson, Frederick W., Cedar Rapids
 Munger, Elbert E., Jr., Spencer
 †Murchison, Kenneth, Sidney
 †Murphy, Arlo L., Fredericksburg
 †Murphy, Cornelius B., Alton
 †Murphy, George C., Waterloo
 Murphy, James H., Des Moines
 †Murphy, Joseph J., Cedar Rapids
 Murray, Edward S., Cedar Rapids
 †Murray, Frederick G., Cedar Rapids
 Murray, Jonathan H., Burlington
 †Murtaugh, James E., New Hampton
 Myerly, William H., Des Moines
 Myers, Edward M., Woodward
 Myers, Judson W., Postville
 Myers, Kermit W., Sheldon
 Nagyfy, Stephen F., Iowa City
 †Nakashima, Victor K., Des Moines
 †Nash, Edwin A., Ottumwa
 Nauman, Ernest C., Waterloo
 Nayfield, Ruth K., Des Moines
 Neal, Emma J., Cedar Rapids
 Neederhiser, Morgan L., Cascade
 †Needles, Roscoe M., Atlantic
 Neglia, Fortunato J., Maxwell
 †Nelken, Leonard, Clinton
 Nelken, Viola D., Clinton
 Nelson, Arnold L., Des Moines
 †Nelson, Carol C., Red Oak
 †Nelson, Fred L., Ottumwa
 †Nelson, Frederick L., Jr., Ottumwa
 †Nelson, Harry E., Dayton
 †Nelson, Leo C., Jefferson
 †Nelson, Paul O., Emmetsburg
 †Nelson, Robert J., Clinton
 †Nemec, Joseph J., Cedar Rapids
 Nesler, Alfred B., Dubuque
 Netolicky, Joseph Y., Solon
 Netolicky, Robert Y., Cedar Rapids
 Netolicky, Wesley J., Cedar Rapids (L.M.)
 †Neufeld, Robert J., Davenport
 Neuzil, William J., Cedar Rapids
 †Newland, Don H., Belle Plaine
 Newlove, Frank E., Wingdale, New York
 †Newman, Cloyce A., Bode
 Newman, Robert W., Iowa City
 †Newton, James S., Washington
 Niblock, George F., Derby
 Nicholson, Clyde G., Des Moines
 †Nicoll, Charles A., Panora
 Nicoll, David T., Mitchellville (L.M.)
 Nielsen, Rudolph F., Cedar Falls
 Nielson, Arthur L., Harlan
 †Niemann, Theodore V., Brooklyn
 †Nierling, Paul A., Cresco
 †Noble, Frederick W., Fort Madison
 †Noble, Harold F., Fort Madison
 †Noble, Nelle S., Des Moines
 †Noble, Rusl P., Alta
 †Noe, Carl A., Cedar Rapids
 †Noe, Charles F., Amana (L.M.)
 Nolan, John C., Corning
 Nonland, Ruben, Iowa City
 †Noonan, James J., Marshalltown
 †Nord, Donald H., Cambridge
 Norment, John E., Clinton

- †North, Frank R., Winfield
†Norton, Alva C., Rockwell City (L.M.)
Noun, Louis J., Des Moines
†Noun, Maurice H., Des Moines
Nourse, Leslie M., Des Moines
†Null, Frederick F., Hawarden
†Nyquist, David M., Eldora
Nysewander, Christian, Des Moines (L.M.)
Ober, Frank G., Burlington
Obermann, Charles F., Cherokee
O'Boyle, Cyril P., Philadelphia, Pa.
O'Brien, Cecil S., Iowa City
O'Brien, Loyal J., Fort Dodge
†O'Brien, Stephen A., Mason City
†O'Connor, Edwin C., New Hampton
†O'Donnell, Joseph E., Clinton
†O'Donoghue, Arch F., Sioux City
†O'Donoghue, James H., Storm Lake
Oelrich, Carl D., Sioux Center
Oggel, Herman D., Maurice
O'Keefe, John E., Waterloo (L.M.)
†O'Keefe, Paul T., Waterloo
Okerlin, Oscar W., Essex
†O'Leary, Francis B., George
†Olsen, Martin I., Des Moines
†Olson, Evelyn M., Winterset
Olson, Russell L., Northwood
O'Neal, Harold E., Tipton
†Osborn, Clarence R., Dexter
†Osincup, Paul W., Sioux City
†Osten, Burdette H., Northwood
†O'Toole, Laurence C., LeMars
†Ott, Martin D., Davenport
†Otto, Paul C., Fort Dodge
†Overton, Lewis M., Albuquerque, New Mexico
Owen, William E., St. Ansgar
Owen, William R., Osage
†Pace, Arthur A., Toledo (L.M.)
Padgham, John T., Grinnell
†Pace, Addison C., Des Moines (L.M.)
Page, Wesley M., Lake City
Pagelsen, Otto H., Iowa Falls
Pahlas, Henry M., Dubuque
Paige, Ralph T., LaPorte City
†Painter, J. Carl, Dubuque
Painter, Robert C., Rochester, Minnesota
Palmer, Carson W., Guttenberg
Palumbo, Louis T., Des Moines
†Paragas, Modesto R., Creston
†Parish, John R., Grinnell
*†Parish, Ora F., Grinnell (L.M.)
†Park, Elmer R., Sioux City
†Parke, John, Cedar Rapids
Parker, Edward S., Ida Grove (L.M.)
†Parker, Robert L., Des Moines
Parkin, Robert C., New Albin
†Parks, Claude O., Iowa City
†Parry, Roy E., Scranton
†Parsons, John C., Des Moines
Parsons, Percival L., Traer
†Paschal, George A., Webster City
Pascoe, Paul L., Carroll
Patterson, Alpheus W., Des Moines
Patterson, John N., Burlington (L.M.)
†Patterson, Roy A., Webster City
†Paul, John D., Anamosa
†Paul, Robert D., Anamosa
Paul, William D., Iowa City
†Paulsen, Herbert B., Harris
†Paulus, Edward W., Iowa City
Paulus, James W., Dubuque
†Payne, Roswell H., Exira
†Pearlman, Leo R., Des Moines
Pearson, George J., Burlington
†Peart, John C., Davenport
Pease, Herbert, Alta Vista
†Peasley, Harold R., Des Moines
†Peck, Raymond E., Davenport
†Peggs, Harold J., Des Moines
Peisen, Conan J., Des Moines
Pelz, Werner P., Nashua
Pence, James W., Columbus Junction
Penly, Don H., Cedar Falls
†Penn, Eugene C., Wes Des Moines
Perkins, Franklyn C., Hedrick
†Perkins, Rolla W., Sioux City
Perkins, Rollin M., Davenport
†Perley, Arthur E., Waterloo
†Perrin, H. Joyce, Des Moines
†Peschau, Waldo E., Cedar Rapids
Petersen, Emil C., Atlantic
Petersen, Millard T., Atlantic
†Petersen, Vernon W., Clinton
Peterson, Evan A., Burlington
Peterson, Frank R., Iowa City
Peterson, John C., Jr., Hartley
†Peterson, Ray W., Clear Lake
Pfeiffer, Eric P., Des Moines
Pfeiffer, Ernst, Hartley
†Pfeiffer, Harry E., Cedar Rapids
Pfohl, Anthony C., Dubuque
†Phelps, Richard E. H., New Sharon
†Phillips, Albin B., Clear Lake (L.M.)
†Phillips, Allan B., Des Moines
†Phillips, Clarence P., Muscatine
Phillips, Isaac H., Missouri Valley
Phillips, Jesse H., Montezuma (L.M.)
Phillips, Walter B., Montezuma
Pickard, John C., Dubuque
Pickens, J. Keith, Fort Dodge
Piekenbrock, Frank J., Dubuque
†Piercy, Kenneth C., Ames
†Pierson, Lawrence E., Sioux City
Pitluck, Harry L., Laurens
Plankers, Arthur G., Dubuque
Plass, Everett D., Iowa City
Plimpton, Robert P., Denison
Poepsel, Frank L., West Point
Porter, Charles E., Redfield
Porter, Richard C., Des Moines
†Porter, Robert J., Des Moines
†Porter, S. Dale, Grinnell
Posner, Edward R., Des Moines (L.M.)
Powell, Burke, Albia (L.M.)
†Powell, Lester D., Des Moines
Powell, Robert A., Shenandoah
Powell, Velura E., Red Oak
Powers, George H., Shenandoah
†Powers, Henry R., Emmetsburg
†Powers, Ivan R., Waterloo
†★Pratt, Elmer B., Iowa City
Preece, Wade O., Waterloo
Prentice, George L., Bloomfield
Presnell, J. William, Scranton
†Presnell, William H., Charlotte
Prettyman, Oscar R., Manson
Prewitt, Leland H., Ottumwa
†Price, Alfred S., Des Moines
Priessman, Frank A., Keokuk
†Priestley, Joseph B., Des Moines
Pringle, Jesse A., Oconomowoc, Wisconsin (L.M.)
Proctor, Rothwell D., Cedar Rapids
†Prouty, James V., Cedar Rapids
Province, William, Jr., Centerville
†Ptacek, Joseph L., Webster City
Pumphrey, Loira C., Keokuk
Puntney, A. W., Stratford
Purdy, William O., Des Moines
†Putnam, Chester L., Des Moines
Quinn, Francis P., Dubuque
Quirin, Lloyd, Des Moines
Ralston, Furman P., Knoxville
†Rambo, Cyrus C., Creston
†Rambo, David T., Ottumwa (L.M.)
Randall, John H., Iowa City
Randall, William L., Hampton
†Rankin, Isom A., Iowa City
†Rankin, John R., Keokuk
†Rankin, William, Keokuk
†Ransom, Harry E., Des Moines
†Rater, David L., Ottumwa
†Rathe, Herbert W., Waverly
Rausch, Gerald R., Clarinda
†Ravitts, Joseph L., Montezuma
†Raw, Elmer J., Pierson
†Redmond, James J., Cedar Rapids
†Redmond, Thomas M., Monticello
Reed, Andrew I., Estherville
†Reed, Guy P., Davis City (L.M.)
†Reed, Paul A., Iowa City
†Reed, Purl E., Council Bluffs
†Reeder, James E., Sioux City
†Reeder, James E., Jr., Sioux City
†Reedholm, Edwin A., Grundy Center
†Reiley, William S., Red Oak (L.M.)
Reimers, Robert S., Fort Madison
Reinicke, Edward L., Dubuque (L.M.)
†Reinsch, Frank, Ashton
†Render, Norman D., Clarinda
†Rendleman, William H., Davenport
Rendleman, W. Hugh, Davenport
Reuber, Roy N., Mason City
Reuling, Frank H., Waterloo
†Reynolds, Albert C., Des Moines
Reynolds, Earl O., Greenfield
Rhodes, John M., Pocahontas
†Rhomburg, Edward B., Guttenberg
†Rice, Floyd W., Des Moines
†Richardson, Leon F., Collins
Richey, Granville L., Centerville
†Richmond, Arthur C., Fort Madison
†Richmond, Frank R., Fort Madison
†Richmond, Paul C., New Hampton
†Richter, Harold J., Albia
†Ridenour, Joseph E., Waterloo
†Riegelman, Ralph H., Des Moines
Rieniets, John H., Cedar Rapids
†Riess, Stephen, Cedar Rapids
Riggle, Frank P., Cedar Rapids
Riley, John, Exira (L.M.)
Rimel, George W., Bedford
Ringena, Engelke J., Brooklyn
†Rinker, George E., Oto
Risk, Howard, Oelwein (L.M.)
Ritter, Eugene F., Centerville
Rives, Hugh F., Dubuque
†Rizzo, Frank, Sibley
†Robb, James B., Chariton
Robb, Robert W., Independence
Roberts, Charles R., Dysart
Roberts, Francis L., Spirit Lake
Roberts, Francis M., Knoxville
†Roberts, Justus B., Ottumwa
Robertson, Andrew A., Council Bluffs
Robertson, Treadwell A., West Liberty
Robinson, George L., Waterloo
†Robinson, Robert E., Waverly (L.M.)
†Robinson, Van C., Des Moines
†Rock, John E., Davenport
†Rock, Joseph H., Davenport
†Rockwell, Maryelda, Clinton
†Rodawig, Donald F., Spirit Lake
†Roddy, Harold J., Mason City
Rodemeyer, Frederick H., Sheffield
†Roder, Carl F., Dumont
Rodgers, Lewis A., Oskaloosa (L.M.)
†Roe, Cullen B., Afton
Rogers, Claude B., Earlville
†Rohlf, Edward L., Jr., Waterloo
Rohner, Frank J., Iowa City (L.M.)
†Rohrbacher, William M., Iowa City
†Rohwer, Roland T., Sioux City
Rols, Floyd O., Parkersburg
Rols, Fred A., Aplington
†Romine, John H., Webster City
†Rominger, Clark R., Waukon
Rominger, Clark W., Waukon
†Roost, Frederick H., Sioux City
†Rose, Alvin A., Story City
Rose, Joseph E., Grundy Center
Roseberg, Bertil, Iowa City
†Rosebrook, Lee E., Ames
†Rosendorf, Charlotte, Bettendorf
Ross, Arthur J., Jr., Perry
†Rost, Glenn S., Lake City
†Rotkow, Maurice J., Des Moines
†Rowat, Harry L., Des Moines
Rowley, Robert D., Burlington
†Rowley, William G., Sioux City
Royal, Lester A., West Liberty
†Royal, Malcolm A., Des Moines
Rudersdorf, Howard E., Hawarden
Ruml, Wentzle, Cedar Rapids (L.M.)
Rusk, Ross P., Dubuque
Russ, Jesse E., Rake
Russell, Elwood P., Burlington
†Russell, John, Yuma, Arizona
Russell, Ralph E., Waterloo
Rust, Emery A., Webb
†Ruth, Verl A., Des Moines
†Ryan, Allen J., Harlan
Ryan, Cyril J., Creston
†Ryan, Granville N., Des Moines (L.M.)
†Ryan, Martin J., Sioux City
Saar, Jesse L., Donnellson
†Saar, John W., Keokuk
Sage, Erwin C., Burlington
Sahs, Adolph L., Iowa City
†St. Onge, Joseph A., Sioux City
Samburg, Harry H., Des Moines
Sampson, Carl E., Creston
Sampson, Frank E., Creston (L.M.)
Sampson, Joseph H., Clarion (L.M.)
Sanders, George E., Des Moines
Sanders, Matthew G., Fort Dodge
Sanders, William E., Long Beach, Calif.
†Sarff, Floyd G., Logan
†Sartor, Guido J., Mason City
†Sartor, Pierre, Tipton
†Sattler, Dwight G., Kalona
Sauer, Harold E., Des Moines
Savage, Lester W., Harlan
†Sawyer, Grace M., Woodward
†Sawyer, Prince E., Sioux City
Saylor, Harley L., Des Moines (L.M.)
†Sayre, Ivan K., St. Charles
†Scales, Emmet T., Des Moines
†Scanlan, George C., DeWitt
Scanlan, Maurice, DeWitt
†Scanlon, George H., Iowa City
Schadt, Frederick C., Williamsburg
Schaefer, Paul H., Burlington
†Schaeferle, Lawrence G., Gladbrook
†Schaeferle, Martin J., Eagle Grove
†Schaefer, Leroy W., Sioux City
†Schaefer, Leander H., DeWitt
†Schanche, Arthur N., Ames
Scharle, Theodore, Dubuque
†Scharnweber, Henry C., Boone
Scheldrup, Eugene W., Iowa City
Schenk, Irwin, Des Moines
Schiff, Joseph, Walla Walla, Washington
★Schlaser, Verne L., Des Moines
Schlichtemeier, Ellis O., Peterson
Schmitz, Henry C., Des Moines
†Schmug, George E., Dows
†Schoonover, Richard, Bloomfield
†Schreiner, Charles A., Ollie
†Schrier, Harold L., Fayette

- †Schroeder, Adrian J., Marshalltown
 †Schroeder, Frank N., Ryan
 †Schroeder, Leslie V., Walcott
 †Schrupp, Joseph H., Dubuque (L.M.)
 †Schueller, Charles J., Dubuque
 †Schultz, Albert A., Fort Dodge
 †Schultz, Ivan T., Humboldt
 †Schultz, Nelle E. T., Humboldt
 †Schutter, John M., Algona
 †Schwartz, John W., Sioux City
 †Scott, Phillip A., Spirit Lake
 †Scott, Sophie H., Des Moines (L.M.)
 †Scott, Walter E., Adel (L.M.)
 †Seaman, Charles L., Cherokee
 †Sedlacek, Leo B., Cedar Rapids
 †Seely, Harmon D., Cherokee
 †Seibert, Cecil W., Waterloo
 †Seidler, William A., Jamaica (L.M.)
 †Seidler, William A., Jr., Jamaica
 †Seiler, Raymond A., Blainstown
 †Sellards, Joseph W., Clarinda
 †Sellers, Earl D., Moulton
 †Sells, Benjamin B., Independence
 †Selman, Ralph J., Ottumwa
 †Selo, Rudolph A., Hazleton
 †Senska, Frank R., Brandon
 †Senty, Elmer G., Davenport
 †Severson, George J., Slater
 †Shafer, Arthur W., Davenport
 †Shafer, Lee E., Davenport
 †Shane, Robert S., Pilot Mound
 †Shannon, Edwin R., Waterloo
 †Sharpe, Donald C., Dubuque
 †Shaw, Albert E., Des Moines
 †Shaw, David F., Britt
 †Shaw, Ernest E., Indianola
 †Shaw, Matthew M., Madrid
 †Shaw, Robert E., Waverly
 †Shea, Thomas E., Storm Lake
 †Sheimo, Stanton L., Los Angeles, Calif.
 †Shelton, Charles D., Bloomfield
 †Shepherd, Loyd K., Des Moines
 †Sherlock, John H., Rock Rapids
 †Sherman, Richard C., Farley
 †Shine, Dan W., Oelwein
 †Shonka, Thomas E., Malvern
 †Shope, Charles D., Greenfield
 †Shorey, Joseph R., Davenport
 †Shrader, John C., Fort Dodge
 †Shulkin, Samuel H., Sioux City
 †Shurtleff, Raymond S., Davenport
 †Shurts, John J., Eldora
 †Siberts, Frank L., Hampton
 †Sibley, Edward H., Sioux City
 †Sievers, Claudius L., Denison
 †Sigworth, Fred B., Anamosa
 †Simmons, Ralph R., Des Moines
 †Simons, James D., Leon
 †Simonsen, Marie N., Blair, Nebraska
 †Singer, Siegmund F., Ottumwa
 †Sinn, Irvin J., Williamsburg
 †Sinning, Augustus, Iowa City
 †Sinning, John E., Marshalltown
 †Skallerup, Walter M., Walker
 ★Skelly, Paul B., Jr., Maquoketa
 †Skultety, James A., Des Moines
 †Smazal, Stanley F., Davenport
 †Smead, Howard H., Des Moines
 †Smead, Leslie L., Newton
 †Smiley, Ralph E., Mason City
 †Smith, Arthur F., Manning
 †Smith, Cecil R., Wyoming
 †Smith, Channing G., Granger
 †Smith, Elmer M., Eagle Grove
 †Smith, Eugene E., Waterloo
 †Smith, Ferdinand J. E., Milford (L.M.)
 †Smith, Franklin C., Mount Ayr (L.M.)
 †Smith, Harold F., Iowa City
 †Smith, Herman J., Des Moines
 †Smith, Homer A., Correctionville
 †Smith, Howard W., Woodward
 †Smith, Jason N., Iowa City
 †Smith, John E., Clarence
 †Smith, Lawrence D., Des Moines
 †Smith, Rex L., Waterloo
 †Smith, Robert A., Albia
 †Smith, Robert T., Granger
 †Smith, Sidney D., Waterloo
 †Smouse, William O., Des Moines (L.M.)
 †Smrha, James A., Cedar Rapids
 †Smythe, Arnold M., Des Moines
 †Snyder, Dean C., DeWitt
 †Snyder, John A., Roland
 †Snyder, Raleigh R., Des Moines
 †Soe, Peder, Kimballton (L.M.)
 †Sohm, Herbert A., Des Moines
 †Sokol, Charles R., State Center
 †Solis, Delmar B., Chariton
 †Somers, Pearl E., Grinnell (L.M.)
 †Sones, Clement A., Des Moines
 †Sorensen, Elmer M., Red Oak
 †Sorensen, Regner M., Des Moines
 †Sorenson, Aral C., Davenport
 †Sorenson, Kermit R., Sabula
 Soucek, Adolph, Cherokee
 Spain, Robert T., Conrad
 †Sparks, Francis R., Waverly (L.M.)
 †Spaulding, Homer L., Ankeny (L.M.)
 †Spear, William M., Oakdale
 †Speidel, Glenn P., Hartford, Connecticut
 †Spellman, Martin T., Cedar Rapids
 †Spewer, Wendell B., Nevada
 †Sperry, Frederick S., Clarinda
 †Spilman, Harold A., Ottumwa
 †Springer, Floyd A., Des Moines
 †Sproul, William M., Des Moines
 †Stafford, James F., Lovilia (L.M.)
 †Stafford, John H., Sac City (L.M.)
 †Stam, Nicholas C., Mason City
 †Standefer, Joe M., Des Moines
 †Standeven, James W., Oakland
 †Stansbury, John E., Cedar Rapids
 †Stark, Callistus H., Cedar Rapids
 †Starr, Charles F., Mason City
 †Starry, Allen C., Sioux City
 †Stauch, Omar A., Sioux City
 †Staudt, Alfred J., Waterloo
 †Stearns, Frederick T., Osage
 †Steelsmith, Frank R., Des Moines
 †Steenrod, Emerson J., Iowa Falls
 †Steffens, Lincoln F., Dubuque
 †Steffey, Fred L., Keokuk
 †Stegman, Jacob J., Marshalltown
 †Steindler, Arthur, Iowa City
 †Stephen, Paul, Manchester
 †Stephen, Raymond J., Cedar Rapids
 †Stephenson, Wayland H., Newton
 †Stapp, James K., Tulsa, Oklahoma
 †Sternagel, Fred, West Des Moines
 †Sternberg, Walter A., Mount Pleasant (L.M.)
 †Sternhill, Irving, Mason City
 †Sternhill, Isaac, Council Bluffs
 †Stevenson, Eber F., Waterloo (L.M.)
 †Stevens, Richard J., Des Moines
 †Stewart, John K., Clinton
 †Stewart, Robert A., Independence
 †Stewart, William L., Mediapolis
 †Stickler, Robert B., Des Moines
 †Stinson, Alice C., Estherville
 †Stoakes, Charles S., Lime Springs
 †Stober, Raymond W., Charles City
 †Stodden, Frank J., Jefferson, South Dakota
 †Stoecks, William A., Davenport
 †Stolley, Jordan G., Moline
 †Storck, Robert D., Dubuque
 †Straub, Joseph J., Iowa City
 †Strawn, John T., Des Moines
 †Stribley, Harry A., Dubuque
 †Stroy, Herbert E., Osceola
 †Struble, Gilbert C., Los Angeles, California
 †Struck, Kuno H., Davenport
 †Stuart, Percy E., Nashua
 †Stueland, A. J. R., Mason City
 †Stumme, Ernest H., Denver
 †Stutsman, Eli E., Washington
 ★Stutsman, Robert E., Washington
 †Suchomel, Thomas F., Cedar Rapids
 †Sugg, Herbert R., Clinton
 †Sulek, Arthur E., Cedar Rapids
 †Sullivan, Lawrence F., Donahue
 †Sunderbruch, John H., Davenport
 †Svendsen, Reinert N., Decorah
 †Swab, Charles C., Cedar Rapids
 †Swallum, James A., Storm Lake
 †Swallow, Troy W., Spencer
 †Swanson, Leslie W., Mason City
 †Sweeney, Lloyd J., Sanborn
 †Swift, Frederick J., Jr., Maquoketa, Michigan
 †Swift, Frederick J., Maquoketa
 †Swinney, Roy G., Richland
 †Sybenga, Jacob J., Pella
 †Synhorst, John B., Des Moines
 †Sywassink, George A., Muscatine
 †Tait, John H., Des Moines
 †Talley, Louis F., Marshalltown
 †Tamisiea, Francis X., Missouri Valley
 †Tamisiea, John L., Missouri Valley
 †Taylor, Charles L., Pomeroy
 †Taylor, Edward D., Bettendorf (L.M.)
 ★Taylor, Ingram C., Martinsburg, West Virginia
 †Taylor, Lawrence A., Ottumwa
 †Taylor, Maude, Ottumwa
 †Taylor, Robert S., Davenport
 †Taylor, Wendel W., Sheffield
 †Teufel, John C., Davenport
 †Thaler, David, Cedar Rapids
 †Tharp, Herbert M., Monroe
 †Thatcher, Wilbur C., Fort Dodge
 †Thayer, Wilbur F., Ocheyedan
 †Thein, Garfield M., Oelwein
 †Theisen, Roy I., Dubuque
 †Thielen, Edward W., Waterloo
 †Thielen, John B., Fonda
 †Thomas, Clifford W., Mason City
 †Thomas, Clyde E., Keystone
 †Thomas, Colin G., Monticello
 †Thomas, Louis A., Red Oak (L.M.)
 †Thomas, William H., McGregor
 †Thompson, Elvin D., Jefferson
 ★Thompson, Harry F., Forest City (L.M.)
 †Thompson, Howard E., Dubuque
 †Thompson, James R., Waterloo
 †Thompson, Kenneth L., Oakland
 †Thompson, Lynn W., Atlantic
 †Thompson, Virginia D., Des Moines
 †Thompson, William L., Bayard (L.M.)
 †Thoms, Adolph N., Cedar Falls
 †Thomsen, Thomas F., Red Oak
 †Thorburn, Oral L., Ames
 †Thornburg, William V., Guthrie Center (L.M.)
 †Thornell, Joseph B., Council Bluffs
 †Thornton, F. Eberle, Des Moines
 †Thornton, John W., Lansing
 †Thornton, Thomas F., Waterloo
 †Thorness, Edwin T., Dubuque
 †Thorson, John A., Dubuque
 †Throckmorton J. Fred, Des Moines
 †Throckmorton, Jeannette Dean, Des Moines (L.M.)
 †Throckmorton, Robert F., Des Moines (L.M.)
 †Throckmorton, Scott L., Chariton
 †Throckmorton, Tom B., Des Moines
 †Throckmorton, Tom D., Des Moines
 †Tice, Claude B., Mason City
 †Tidrick, Robert T., Iowa City
 †Tierney, Edmund J., Sioux City
 †Tilton, John J., Bellevue
 †Tinley, Mary L., Council Bluffs (L.M.)
 †Tinley, Mathew A., Council Bluffs
 †Tinley, Robert E., Council Bluffs
 †Tinsman, Eugene, Orient
 †Titus, Elton L., Iowa City
 †Todd, Donald W., Guthrie Center
 †Tolliver, Hillard A., Charles City
 †Tombaugh, Frank M., Burlington (L.M.)
 †Tompkins, Erle D., Clarion
 †Toubes, Abraham A., Des Moines
 †Towle, Robert A., Davenport
 †Tracy, John S., Sioux City
 †Traister, John E., Eddyville
 †Trey, Bernhard L., Marshalltown
 †Treyron, Jack V., Council Bluffs
 †Trimbo, Joseph H., Chelsea
 †Tripp, Leroy R., Sioux City
 †Trueblood, Clare A., Indianola
 †Trunnell, Thomas L., Waterloo
 †Turner, George E., West Des Moines
 †Turner, William R., Fort Dodge
 †Tyler, William H., Cedar Rapids
 †Tyrell, Joseph W., Des Moines (L.M.)
 †Unger, David, Des Moines
 †Uppdegraff, Charles L., Boone
 †Valiquette, Frank G., Sioux City
 †Van Camp, Thomas H., Breda
 †Vander Meulen, Herman C., Pella
 †Vander Stoep, Harry L., LeMars
 †Vander Veer, Frank L., Janesville (L.M.)
 †Van Duzer, William R., Casey
 †Van Epps, Clarence E., Iowa City
 †Van Epps, Eugene F., Iowa City
 †Vangness, Ingmar U. C., Sioux City
 †Van Hale, Laurence, A., Inglewood, California
 †Van Metre, Paul W., Rockwell City
 †Van Patten, Ernest M., Fort Dodge
 †Van Tiger, William H., Eldora
 †Van Werden, Benjamin D., Keokuk
 †Van Winkle, Howard L., Cedar Rapids
 †Van Zante, Peter, Pella
 †Van Zanten, Will, Brighton
 †Vaubel, Ellis K., Estherville
 †Veldhouse, Richard H., Cedar Rapids
 †Veltman, John F., Winterset
 †Vernoor, Gerrit E., Sheldon
 †Vernon, Fred G., Jewell
 †Vest, William M., Iowa City
 †Vesterberg, Peder H., Forest City (L.M.)
 †Victorine, Edward M., Cedar Rapids
 †Vincent, Jack F., Fort Dodge
 †Vineyard, Thomas L., Ottumwa
 †Vinson, Harry W., Ottumwa
 †Voigt, Ernest J., Burlington
 †Voigt, Frank O. W., Oskaloosa
 †Vollmer, Karl, Davenport (L.M.)
 †von Lackum, Herman J., Dysart (L.M.)
 †von Lackum, J. Kenneth, Cedar Rapids
 †Vorpahl, Rudolph A., Cedar Rapids
 †Voss, Otto R., Davenport
 †Waddell, Jesse C., Paton
 †Waggoner, Charles V., Clinton
 †Wagner, Eugene C., Plainfield
 †Wagner, James A., Primghar
 †Wahrer, Frederick L., Marshalltown
 †Wailes, John W., Davis City (L.M.)
 †Wainwright, Maxwell T., Sioux City

- Wakeman, Allie H., Fort Dodge
 †Walker, Charles C., Des Moines
 Walker, Glenn L., Iowa City
 Walker, Harry L., Cedar Rapids
 †Walker, Herbert P., Clarion
 Walker, Thomas G., Riceville
 Walker, Thomas S., Riceville (L.M.)
 †Wall, David, Ames
 Wallace, Evelyn G., Iowa City
 †Wallace, Robert M., Algona
 Wallahan, Jay H., Corning (L.M.)
 Walliker, Wilbur M., Clinton
 Walsh, Eugene L., Huntington, W. Virginia
 Walsh, William E., Hawkeye
 †Walston, Edwin B., Des Moines (L.M.)
 Walton, Seth G., Hampton
 Walvoord, Carl A., Dunlap
 Walvoord, William W., Dunlap
 †Wanamaker, Ambrose E., Hamburg (L.M.)
 †Wanamaker, Ambrose R., Hamburg
 Ward, Donovan F., Dubuque
 Ward, Loraine W., Oelwein
 †Ward, Thomas L., Arnolds Park
 †Ware, Matt, West Branch
 †Ware, Stephen C., Iowa City
 Warner, Emory D., Iowa City
 Warren, Elbert T., Stuart
 Waterbury, Charles A., Waterloo (L.M.)
 †Waterbury, Charles A., Jr., Waterloo
 †Watkin, Clifford R., Sioux City
 Watson, Elbert J., Diagonal (L.M.)
 †Watters, George H., Des Moines
 †Watters, Phil G., Des Moines
 Watters, Vernon G., Jr., Iowa City
 Watts, A. Fred, Seattle, Washington
 Watts, Clyde F., Marengo
 †Weaver, David F., Davenport
 †Weaver, Kenneth H., Union
 Webb, Daniel R., Jr., Cedar Rapids
 †Webb, Waterman T., Fairfield
 †Weber, Frank N., Walnut
 Weber, Leslie E., Wapello
 Weber, William W., Pomeroy
 Wedel, James R., Keokuk
 Weems, Nev E., Paullina
 Wehman, Edward J., Burlington
 †Weih, Elmer P., Clinton
 ★Weih, Jack E., Iowa City
 †Weinberg, Harry B., Davenport
 Weingart, Julius S., Des Moines
 †Weir, Edward C., Council Bluffs
 †Weir, Matt B., Griswold
 †Weis, Howard A., Davenport
 †Weland, Regis E., Cedar Rapids
 Wells, Fred L., Des Moines (L.M.)
 †Wells, Rodney C., Marshalltown
 †Wendell, Margaret R., Ames
 †Wentworth, Laydon S., Marble Rock
 †Wentzien, Albert J., Tama
 Werner, Carl A. A., Des Moines
 †Werner, Harold T., Fort Madison
 †West, Alroy G., Council Bluffs
 West, Harry D., Des Moines
 West, Norman D., Avoca
 West, Walter E., Centerville
 West, William W., Clarinda
 Westenberger, Joseph C., St. Ansgar
 †Westly, Gabriel S., Manly
 Westly, John S., Des Moines
 †Westly, Soren S., Manly
 †Weston, B. Raymond, Mason City
 Weston, Robert A., Des Moines
 Wetrich, Max F., Grand Junction
 †Weyer, Joseph J., Fort Dodge
 Wheelock, Mark C., Mount Pleasant
 †Whitaker, Ben T., Boone
 †White, Harold E., Knoxville
 †White, Paul A., Davenport
 White, Seward, Olin
 †Whitehill, Nelson M., Boone
 Whitehouse, William N., Ottumwa
 Whitley, Ralph L., Osage (L.M.)
 Whitmore, Lysle H., Wilton Junction
 †Whitmire, James E., Sumner
 †Whitmire, William L., Sumner (L.M.)
 †Wicks, Ralph L., Boone
 †Widmer, James G., Wayland
 Wilcox, Delano, Malcom (L.M.)
 Wilcox, Edgar B., Oskaloosa
 †Wilcox, Keith E., Muscatine
 Wildberger, William C., Waverly
 Wilder, Agnes R., Atlantic
 Wiley, Ralph E., Fontanelle
 †Wilke, Frank A., Perry
 Wilkinson, Levi J., Laurel
 †Willett, Wilton J., Manchester
 †Williams, Edward B., Montezuma (L.M.)
 Williams, Edward M., Oskaloosa
 Williams, Edward M., Norway
 Williams, Frank S., Villisca
 †Williams, Nathan B., Belle Plaine
 †Williams, Robert L., Lakota
 Wilson, Charles R., Manson
 †Wilson, Frank D., Sioux City
 Wilson, Fred C., Colesburg
 †Wilson, Fredric L., Sioux City
 †Wilson, Fredric W., Sioux City
 †Winder, Clifford D., Waterloo
 †Winnett, Edwin B., Des Moines
 Wintenburg, Edward J., Van Nuys, California
 Winter, Louis C., Wilton Junction
 †Wirsig, Arnold O., Shenandoah
 Wirtz, Dwight C., Des Moines
 †Wise, James H., Cherokee
 ★Witte, Herbert J., Marathon
 †Wolcott, Ruth F., Spirit Lake
 †Wolf, Henry H., Elgin
 †Wolfe, Joseph H., Iowa City
 †Wolfe, Otis D., Marshalltown
 †Wolfe, Otis R., Marshalltown
 †Wolfe, Russell M., Marshalltown
 †Wolfe, Wilson C., Ottumwa
 Wolfson, Harold, Kingsley
 Wolkin, Julius, Iowa City
 †Wolpert, Paul L., Onawa
 Wolverton, Benjamin F., Cedar Rapids
 Wood, John R., Wadena
 †Wood, Rollin W., Newton
 †Woodard, Floyd O., Des Moines
 †Woodbridge, James W., Emmetsburg (L.M.)
 Woodhouse, George R., Vinton
 †Woodhouse, Keith W., Cedar Rapids
 Woods, Andrew H., Iowa City
 †Woods, Arthur D., State Center
 †Woods, Herbert C., Tama
 †Woods, Hugh B., Des Moines
 †Woodward, Lee R., Mason City
 †Worley, Charles L., Ottumwa
 Wray, Clarence M., Iowa Falls
 Wray, Robert M., Cedar Rapids
 †Wright, Thomas D., Newton
 †Wright, Walter N., Rose Hill
 †Wubbena, Arthur C., Rock Rapids
 †Wurtzer, Ezra L., Clear Lake
 Wyatt, Merlin R., Dallas, Texas
 Wyland, Asa O., Underwood (L.M.)
 †Yackley, James V., Denison
 †Yancey, Charles C., Sioux City
 Yates, Horace C., St. Petersburg, Florida
 †Yavorsky, George W., Belle Plaine (L.M.)
 †Yocum, Albert L., Chariton
 Yost, Charles G., Center Point
 †Young, Clifford W., Onawa
 Young, Ernest R., Dubuque
 Young, George G., Des Moines
 †Young, Henry C., Bloomfield (L.M.)
 Young, Howard O., Marion
 Young, James W., Des Moines
 †Young, Richard A., Clarion
 †Yugend, Sidney F., Indianola
 Ziffren, Sidney E., Iowa City
 Zimmerer, Edmund G., Des Moines
 †Zinn, Edgar N., Fort Dodge
 Zoller, Sherwood B., Fredericksburg
 Zuercher, Arlo R., Cedar Rapids
 †Zukerman, Cecil M., Davenport

★Military Service

★Deceased

†Iowa Medical Service Member (L.M.) Life Member

VETERANS ADMINISTRATION

Treatment of Malaria in Veterans

With the present governmental stress on cutting down expenditures it is very difficult to secure the full and maximum privileges that disabled veterans are entitled to receive. The biggest and most troublesome disability at the present time is malaria. It seems that doctors practicing in the midwestern states are having some of their first experiences with this tropical disease.

Not enough stress has been put on the possibility of this disease being fatal to the person who has been unfortunate enough to have done duty with the Armed Forces in a malaria infected climate. We, as veterans' representatives, are striving to see that the veteran of World War II is receiving the maximum benefits of these laws granted him by the United States government.

In reviewing affidavits that doctors have sent in to the Veterans Administration, we find that they are not doing the veteran justice. These affidavits are too brief and in some instances do not even state that the doctor actually diagnosed malaria. The present regulations for rating malaria disabilities state that a veteran must furnish medical evidence of each and every malaria attack if his disability compensation is to be discontinued or decreased. This evidence should set forth the answers to the following questions which, as you all know, could lead to a diagnosis of malaria:

1. Previous dates which the veteran has had attacks.
2. Statement as to severity of each attack.
3. Outcome of blood smear. If positive, give type of malaria found.
4. Treatment prescribed. Give amount of quinine or atabrine administered and frequency of each dosage.
5. Whether the veteran appears to be anemic.
6. Possibility of whether the veteran has a tender and enlarged spleen.

The Veterans Administration has set up a standard treatment that it believes is very complete in all cases. This treatment is as follows: Quinacrine 0.2 gm. every six hours for five doses to be followed by 0.1 gm. three times a day after meals for six days (total of 2.8 gm. in seven days).

We are striving to get all veterans to contact a physician whenever they have an attack of malaria so that they will get the proper medication and also have the medical evidence that is neces-

sary to reinstate or continue this disability payment. If the veteran should want the Veterans Administration to pay for this treatment the physician should call or write the nearest Veterans Administration Hospital and request authorization to complete the treatment. This request should be made within seventy-two hours of the onset of the malaria chill. The only information that is necessary for the physician to know is the veteran's full name, his address, and his claim or C- number or service-serial number.

We are hoping that the physicians that treat veterans for this disability in the future will do their best in giving these veterans the evidence that is necessary whenever they are asked to do so.

If there are any particular questions that the physicians would like to ask they may contact the Department Service Officer, Veterans of Foreign Wars, Veterans Administration, Valley Bank Building, Des Moines 9, Iowa.

MINUTES OF MEETINGS

(Continued from page 287)

national legislation, Dr. Bernard; board of control institutions, Dr. Konzett; public health, Dr. Stroy; medical practice, Dr. Hennessy. It was voted that each member of the committee should appoint two physicians to assist him.

Plans to hold a state meeting on medical service and public relations to explain the work being done to each county medical society were discussed and the chairman was authorized to appoint a program committee. Meeting adjourned at 12:45 p. m.

BOARD OF TRUSTEES

May 25, 1947

The Board of Trustees of the Iowa State Medical Society met in the central office Sunday morning, May 25, with the following persons present: Trustees John I. Marker, Lee R. Woodward and Walter A. Sternberg; Pres. H. A. Spilman; President-elect J. E. Reeder; Sec. John C. Parsons; Treasurer J. A. Downing, and Robert L. Parker.

Meeting was called to order at 9:15 a. m.; minutes were read and approved, bills authorized and the following business transacted: committee appointments to fill vacancies were made; employment of new personnel was discussed; purchase of new equipment for the office was authorized, and preliminary negotiation of the JOURNAL contract for 1948 initiated. The board also instructed the treasurer to invest \$5,000 in a government bond.

Arrangements for the 1948 meeting were discussed.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. FRED MOORE, Des Moines
President-elect—MRS. A. G. FELTER, Van Meter
Secretary—MRS. CHARLES A. NICOLL, Panora
Treasurer—MRS. NOBLE IRVING, Des Moines

ANNUAL HYGIEA REPORT

Your chairman requested material on *Hygeia* from the American Medical Association in June, 1946, and received it in August. In October she mailed double post cards to all county presidents requesting names of *Hygeia* chairmen. Twelve cards were returned and eight chairmen were appointed; four former presidents reported they had no auxiliaries.

In November, 1946, your chairman sent names of eight chairmen and three committee women to headquarters requesting sample copies of *Hygeia* and other material for them.

In March, 1946, the following reports on subscriptions were submitted:

Dubuque County, Mrs. Henneger.....	39
Madison County, Mrs. Sayre.....	2
Greene County, Mrs. Jackson.....	2
Butler County, Mrs. Mark.....	3
Adair County, Mrs. Ahrens.....	1
	47

Twenty-four sample copies of *Hygeia* were distributed at two Farm Bureau meetings where your chairman gave talks on "Immunization."

Mrs. J. F. Veltman, State Hygeia Chairman.

BUTLER COUNTY AUXILIARY

The Butler County Medical Auxiliary elected the following officers at the May meeting: Mrs. H. G. MacLeod, president; Mrs. E. M. Mark, vice president; Mrs. B. V. Anderson, secretary-treasurer.

Again this year the group is meeting with the doctors for a 6:30 p. m. dinner after which the meeting is held. As the April meeting in Allison, Mrs. F. A. Rolfs presented a talk on "Cancer." In May Mrs. C. F. Roder spoke on the "Physically Handicapped" at the meeting held in Aplington. A report on the convention, at which four members were present, was also given.

Contributions were made to the Cancer Drive and the tuberculosis fund. Though there are only eleven members this year, they are all very active participants.

Mrs. B. V. Anderson, Secretary

ANNUAL REPORT OF DALLAS-GUTHRIE AUXILIARY

Dallas-Guthrie County Medical Auxiliary experienced a busy year starting with the inauguration

of a new president, Mrs. E. J. Butterfield of Dallas Center.

This year saw many doctors who had been in service return to their homes. They and their families were greeted with a special "welcome home" party at Guthrie Center in November.

The usual subjects such as special interest in *Hygeia* subscriptions, the *Bulletin*, special radio broadcasts pertaining to medical advancement, etc., were stressed. There was also a thirty dollar contribution sent to the State Cancer Control Division.

Two social affairs were given, dinner and bridge at Stuart and the dinner for returning service men mentioned above.

Mrs. Butterfield resigned in April, as Dr. Butterfield retired and they moved away. The unexpired term was taken by Mrs. J. F. Loosbrock, Perry, following the farewell dinner and bridge party tendered Dr. and Mrs. Butterfield at Perry in May.

There has always been a fine spirit of cooperation in this auxiliary, and it has been a real pleasure to serve as president of the group for the past several months, granting that the program and committees were taken care of by Mrs. Butterfield earlier in the year.

Mrs. J. F. Loosbrock, President

ANNUAL REPORT OF GREENE COUNTY AUXILIARY

Six meetings were held during the year, five of which were preceded by dinner with the doctors and one with the dentists' wives in the county.

An effort has been made to revive interest in the organization after the lull which the war years brought. We have fostered friendship and are proud of good attendance at the meetings.

Greene County was one of the first to receive state aid and profit by the benefit of the crippled children's project. It has been a very successful effort.

All eligible women but one are members of the organization. Mrs. M. H. Brinker, the state president, is our secretary-treasurer.

Mrs. R. E. Parry, President

ANNUAL REPORT OF MADISON COUNTY AUXILIARY

The Madison County Medical Auxiliary held one meeting during the year. The membership totals seven, which is 100 per cent. Through the efforts

of the group two addresses were given to the Parent-Teacher Association, to which all doctors and auxiliary members were invited. Dr. E. G. Zimmerer spoke on "Cancer" and Mrs. Dorothy Phillips talked on "Handicapped Children." The auxiliary president made talks to two Farm Bureau groups on "Immunitization" and assisted in giving a program on "Medicine in the Future."

Mrs. J. F. Veltman, President

ANNUAL REPORT OF WOODBURY COUNTY AUXILIARY

The Sioux Med-Dames of Woodbury County held six meetings during 1946-47. Throughout the year the handicapped children's program was emphasized.

The November meeting was a tea in the home of Mrs. Lawrence E. Pierson honoring Mrs. Dorothy Phillips, executive secretary of the Iowa Society for Crippled Children. Mrs. Phillips' discussion was most interesting and informative.

The meeting in January of the Sioux Valley Medical Society was as always an inspiration and pleasure to Sioux Med-Dames. A luncheon was held at the Warrior Hotel for the ladies and a banquet in conjunction with the doctors at the Martin Hotel in the evening.

The March meeting, a tea in the home of the president, brought the culmination of the year's planning toward definite participation in the handicapped children's program. Plans were formulated for the first sale, to be held on May 3, of handicraft of the handicapped.

Hygeia magazine was emphasized throughout the year and a definite increase of sales reported. A donation was again sent to the State Nurses' Loan Fund.

Mrs. Charles T. Maxwell, President

SURVEY TELLS NURSE NEEDS

Enrollments in Iowa's 29 nursing schools are almost 40 per cent below capacity, a survey conducted by the State League of Nursing Education showed recently.

The survey showed also that Iowa hospitals could use about 43 per cent more graduate nurses than now are available to care for an increased number of patients.

Heads of all 29 schools said there is a definite nurse shortage and that they have had to use nurse aides, orderlies and other auxiliary workers to meet the crisis.

The survey showed that admissions to hospitals in Iowa have gone up 38 per cent in the last 10 years. The number of nurses going into training has not kept pace, however.

The league said there were only slightly more than 500 first-year students in Iowa's schools of nursing now, compared with more than 1,200 two years ago.

Reasons given for increased admissions to hospitals:

1. People are becoming more health conscious as

evidenced in increased membership in hospitalization programs.

2. Physicians are hospitalizing more patients than formerly so that they can be given the benefit of new drugs which cannot be administered at home.

3. Last year 32 per cent more babies were born in hospitals than in 1929.—Des Moines *Tribune*, April 11, 1947.

NEWS FROM THE NURSING INFORMATION BUREAU

Two new committees were formed during March to promote increased enrollment of student nurses in the nation's 1,271 schools of nursing.

One is the National Committee on Careers in Nursing, organized by the American Nurses' Association, National League of Nursing Education, and National Organization for Public Health Nursing, to carry on the work of the National Nursing Council's disbanded Committee on Careers in Nursing. The other is the American Hospital Association's 1947 Student Nurse Recruitment Committee.

Although organized separately, these committees will work closely together and two members of each group will serve on both committees.

The National Committee on Careers in Nursing, of which Emilie Sargent, Director Detroit Visiting Nurse Association, is chairman, will be served by the NIB staff. Through NIB, new vocational literature is being prepared for state and local enrollment groups. NIB will also prepare and release other promotional materials for the committee.

The 1947 Student Nurse Recruitment Committee, of which Mildred Riese, superintendent of the Children's Hospital, Detroit, is chairman, will sponsor a national backdrop of publicity through the Advertising Council, Inc. It will include radio spot announcements over national broadcasting systems; national distribution of car cards and display posters; sponsored advertisements in national magazines; as well as a kit of publicity materials for local adaptation by hospitals and schools of nursing. It is expected that enrollment for 1947 classes will be increased greatly through the combined and cooperative efforts of these two national committees and of enrollment groups in the various states and districts.

Scholarships

Four summer session scholarships for work with handicapped children will be awarded to Iowa teachers or nurses by the Iowa Society for Crippled Children and the Disabled, Mrs. Dorothy Phillips, executive secretary, announced.

She said these scholarships are made possible through funds raised from the sale of Easter Seals.

The scholarships, good at any college or university in the United States, are for teachers and nurses who plan on working with handicapped children here in Iowa.

This is the second consecutive year the Society has provided these scholarships in an effort to obtain more specialists to aid the handicapped.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- CLINICAL HEMATOLOGY**—By Maxwell M. Wintrobe, M.D., Ph.D., Professor of Medicine, University of Utah, School of Medicine, Salt Lake City, Utah; formerly Associate in Medicine, Johns Hopkins University; Associate Physician, Johns Hopkins Hospital, and Physician-in-Charge, Clinic for Nutritional, Gastro-intestinal and hemopoietic disorders, Baltimore, Maryland. Second edition, thoroughly revised. Lea & Febiger, Philadelphia, 1946. Price, \$11.
- DISEASES OF METABOLISM**—Detailed Methods of Diagnosis and Treatment, A Text for the Practitioner—Edited by GARFIELD G. DUNCAN, M.D., Director of Medical Division, Pennsylvania Hospital; Clinical Professor of Medicine, Jefferson Medical College, Philadelphia, Pa. With contributions by Walter Bauer, Hugh R. Butt, Abraham Cantarow, Tracy Donald Cutler, Garfield George Duncan, Frank Alexander Evans, Ferdinand Fetter, Joseph Marchant Hayman, Jr., Martha A. Hunscher, Friedrich Klemperer, Cyril Norman Hugh Long, Perry MacNeal, Edward H. Mason, Max Miller, Louis H. Newburgh, John Punnett Peters, W. D. Robinson, Tom D. Spies, Leandro Maues Tocantins, Abraham White, Alexander W. Winkler. Second edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$12.
- DISEASES OF THE CHEST WITH EMPHASIS ON X-RAY DIAGNOSIS**—By Eli H. Rubin, M.D., F.A.C.P., F.C.C.P., Attending Physician, Division of Pulmonary Diseases, Montefiore Hospital and Country Sanatorium, New York; Visiting Physician in Tuberculosis and Physician-in-charge, Chest Clinic, Morrisania City Hospital, New York. The Principles of Surgical Treatment—by MORRIS RUBIN, B.A., M.D., Assistant Visiting Surgeon, Triboro Hospital and Morrisania City Hospital, New York; Formerly Chief, Thoracic Surgical Section, Sixty-Ninth General Hospital, Assam, India. W. B. Saunders Company, Philadelphia, 1947. Price, \$12.
- EXPERIENCES WITH FOLIC ACID**—By Tom D. Spies, M.D., Associate Professor of Medicine, University of Cincinnati School of Medicine, Director of the Nutrition Clinic, Hillman Hospital, Birmingham, Alabama. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.
- GYNECOLOGY with a Section on FEMALE UROLOGY**—By Lawrence R. Wharton, Ph.D., M.D., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Assistant Attending Gynecologist, The Johns Hopkins Hospital; Consultant in Gynecology, The Union Memorial Hospital, Hospital for the Women of Maryland, Sinai Hospital and Church Home and Infirmary. Second edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.
- A MANUAL OF THE COMMON CONTAGIOUS DISEASES**—By Philip Meen Stimson, A.B., M.D., Associate Professor of Clinical Pediatrics, Cornell University Medical College; Visiting Physician, Willard Parker Hospital; Director, Poliomyelitis Service, The Knickerbocker Hospital; Medical Director, The Floating Hospital of St. John's Guild; Associate Attending Pediatrician, The New York Hospital; Consulting Pediatrician, The Meadowbrook, Bergen Pines, and Norwegian Lutheran Hospitals. Fourth edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$4.
- NUTRITIONAL AND VITAMIN THERAPY IN GENERAL PRACTICE**—By Edgar S. Gordon, M.D., Ph.D., Associate Professor of Medicine, University of Wisconsin. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.
- REHABILITATION THROUGH BETTER NUTRITION**—University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Alabama; by TOM D. SPIES, M.D., from the Department of Internal Medicine, University of Cincinnati College of Medicine. W. B. Saunders Company, Philadelphia, 1947. Price, \$4.
- Rh—ITS RELATION TO CONGENITAL HEMOLYTIC DISEASE AND TO INTRAGROUP TRANSFUSION REACTIONS**—By Edith L. Potter, M.D., Ph.D., Assistant Professor of Pathology, Department of Obstetrics and Gynecology, The University of Chicago and the Chicago Lying-in Hospital. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.50.
- SURGICAL PATHOLOGY**—By William Boyd, M.D., Dipl. Psychiat., M.R.C.P. Edin., F.R.C.P. Lond., LL.D. Sask., M.D., Oslo, F.R.S.C., Professor of Pathology, The University of Toronto. Sixth edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.
- A TEXTBOOK OF PATHOLOGY**—By E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis, Minn.; Contributors—B. J. Clawson, M.D., Professor of Pathology in the University of Minnesota, and J. S. McCartney, M.D., Associate Professor of Pathology in the University of Minnesota. Sixth edition. Lea & Febiger, Philadelphia, 1947. Price, \$10.
- UROLOGY IN GENERAL PRACTICE**—By Nelse F. Ockerblad, B.S., M.D., F.A.C.S., Professor of Clinical Urology, University of Kansas School of Medicine; Senior Attending Urologist to St. Luke's Hospital; Consulting Urologist to the Children's Mercy Hospital, Kansas City, Mo.; Diplomate of the American Board of Urology. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.75.
- 1946 YEARBOOK OF OBSTETRICS AND GYNECOLOGY**—Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., Professor of Gynecology, Cook County Graduate School of Medicine; Chairman, Department of Gynecology, Cook County Hospital; Attending Obstetrician and Gynecologist, Michael Reese Hospital; Associate Staff, Chicago Lying-in Hospital; author of "Office Gynecology" and "Obstetrics in General Practice"; co-author of the DeLee-Greenhill "Principles and Practice of Obstetrics." The Year Book Publishers, Chicago, 1947. Price, \$3.75.

BOOK REVIEWS

DISEASES OF THE CHEST WITH EMPHASIS ON X-RAY DIAGNOSIS

By Eli H. Rubin, M.D., F.A.C.P., F.C.C.P., Attending Physician, Division of Pulmonary Diseases, Montefiore Hospital and Country Sanatorium, New York; Visiting Physician in Tuberculosis and Physician-in-Charge, Chest Clinic, Morrisania City Hospital, New York. The Principles of Surgical Treatment by MORRIS RUBIN, B.A., M.D., Assistant Visiting Surgeon, Triboro Hospital and Morrisania City Hospital, New York; Formerly Chief, Thoracic Surgical Section, Sixty-Ninth General Hospital, Assam, India. W. B. Saunders Company, Philadelphia, 1947. Price, \$12.

From the rich clinical background in pulmonary disease to be found at Montefiore Hospital comes

another significant volume devoted to diseases of the chest.

Comprehensive in scope and constituting an impressive volume running to more than six hundred pages, it has two outstanding characteristics: the title indicates that it is a discussion of diseases of the chest "with emphasis on x-ray diagnosis." Short of an x-ray atlas of the chest, it is difficult to conceive of a volume more profusely illustrated with reproductions of roentgenograms. These are of high order of clarity. They are captioned by legends which succinctly point out the essential details and go far toward illuminating the remarks in the accompanying text.

Even more refreshing, during a trend toward publishing texts composed by several authors focusing upon a single topic, is the presentation of an individual point of view, surveying a vast field. Dr.

Rubin has succeeded in demonstrating that he has had personal experience with the phases of pulmonary diseases about which he writes. Yet the viewpoint, while individual, is not personalized. Controversial matters such as BCG vaccination, phrenophraxis and pneumoperitoneum he discusses with fairness, but his own preferences are apparent as the subject is dismissed.

The text has strength in its approach to the anatomy and physiology of respiratory diseases, and their roentgenographic correlations. A large section is devoted to pulmonary tuberculosis, without unbalancing the volume. The etiology of bronchiectasis is given new clarity and the review of this important disease process is well done. The mortality figures, however, are quoted without always indicating the years during which these data were collected. One would like to see additional summaries of this topic comparing results before and after the introduction of the sulfonamides and the antibiotics.

Least satisfactory is the chapter entitled "Heart-lung Disease" with a discussion of cardiopulmonary relationships. Development of information in this increasingly important topic for investigation is needed, not only for the course of pulmonary disease itself, but because of the late effects of diminished lung volume through surgical measures.

A final section on principles of surgical treatment by Morris Rubin, brother of the senior author, is unnecessary to the scope of the volume. It is not devoted simply to the *principles* of surgical management, but rather to a variety of surgical procedures used in the treatment of patients with pulmonary disease. Principles of surgical therapy are implicit in the knowledge of the process of inflammation and of pulmonary physiology.

The imposing tradition established by Fishberg, carried on and enhanced by Wessler and Pinner, is reflected in Dr. Rubin's thinking and brought up to date for the physician of 1947.

L. J. G.

PARENTERAL ALIMENTATION IN SURGERY With Special Reference to Proteins and Amino Acids

By Robert Elman, M.D., Associate Professor of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo.
Paul B. Hoeber, Inc., New York, 1947.
Price, \$4.50.

This monograph discusses briefly and concisely in readable fashion the principles underlying parenteral alimentation. The knowledge of basic sciences and parenteral medicaments are explained in simple understandable language. Vast theoretical considerations are not included. As the author mentions, parenteral alimentation concerns not only the surgeon but also the internist since its indications include numerous medical conditions. One chapter is devoted to a practical program and should be of interest to all practicing physicians.

The various deficiencies such as that of protein are discussed along with other diagnoses and remedial treatment. His indications are reasonable and

in no way too broad in spite of his many years' work on the subject. They are explained by good reasons. Parenteral alimentation has been developed to a point now where modern practices demand its employment. This book is well worth reading and is recommended to all doctors.

J. E. P.

THE PHYSIOLOGICAL BASIS OF MEDICAL PRACTICE

A University of Toronto Text in Applied Physiology

By Charles Herbert Best, C.B.E., M.A., M.D., D.Sc. (Lond.), F.R.S., F.R.C.P. (Canada), Professor and Head of Department of Physiology, Director of the Banting-Best Department of Medical Research, University of Toronto; and NORMAN BURKE TAYLOR, V.D., M.D., F.R.S., R.R.C.S. (Edin.), F.R.C.P. (Canada), M.R.C.S. (Eng.), L.R.C.P. (Lond.), Professor of Physiology, University of Toronto. Fourth edition. The Williams & Wilkins Co., Baltimore, 1945.
Price, \$10.

The practice of medicine in this day and age requires more than a "God Given Clinical Sense." A thorough knowledge of physiology as it pertains to medicine is required. "Best and Taylor" remains without a peer as a text for supplying such knowledge.

The fourth edition of this work is altered radically in its make-up with double columns per page, larger pages, and smaller type intended to make for easier reading. There are a few minor additions and corrections in the text.

The style continues to be fluent, the material well organized. In its sections on blood and lymph, the circulation of the blood, respiration, the excretion of urine, digestion, metabolism and nutrition, the ductless glands and endocrines, the nervous system, and special senses, we can find the answers to many of the "whys and wherefores" of syndromes which we see in our practice. If we could spend "fifteen minutes a day" with this book, what excellent practitioners we would become!

D. J. G.

THE 1946 YEAR BOOK OF INDUSTRIAL AND ORTHOPEDIC SURGERY

Edited by Charles F. Painter, M.D., late Orthopedic Surgeon to the Massachusetts Women's Hospital and Beth Israel Hospital, Boston. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.

This year book, prepared under the editorship of Dr. Charles F. Painter, certainly qualifies as a valuable and important contribution to industrial and orthopedic surgery. It is interesting to note that many of the advances effected by physicians in the armed services are included in the book. Any physician will find much of value in this year book which all industrial and orthopedic surgeons will find valuable for reference purposes.

E. M. G.

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk County

The regular meeting of the Black Hawk County Medical Society was held June 19 at the Medical Lodge in Cedar Heights. Dr. Russel D. Herrold, Professor of Urology at the University of Illinois, spoke on "Problems Commonly Encountered in Medical Urology."

Cerro Gordo County

Dr. Edward Woodward, formerly of Mason City but now surgical resident, University of Chicago Clinics, spoke at the monthly meeting of the Cerro Gordo County Medical Society at Hotel Hanford, Mason City, May 13. His subject was "Vagotomy in the Treatment of Peptic Ulcer," and he illustrated his talk with colored movies.

Linn County

At the business meeting of the Linn County Medical Society held at the Cedar Rapids Country Club, Cedar Rapids, June 4, the following officers were elected: Dr. Donald Challed, president-elect; Dr. John Keith, vice president; Dr. James J. Redmond, secretary; Dr. William Kruckenberg, treasurer; Drs. J. K. von Lackum and C. H. Stark, delegates; and Drs. Phil Crew and L. J. Halpin, alternates. All are from Cedar Rapids with the exception of Drs. Keith and Crew of Marion.

Polk County

Members of the Polk County Medical Society entertained their wives at the annual spring party held at the Wakonda Club, Des Moines, May 21. Following dinner, the group participated in bridge and dancing.

Washington County

The Washington County Medical Society met May 20 in the Nurses' Home, Washington. Following a 6:30 o'clock dinner, Dr. J. W. Dulin of Iowa City spoke on "Biliary Fract Diseases." He illustrated his talk with lantern slides.

Woodbury County

The June meeting of the Woodbury County Medical Society was held June 12 in the Mayfair Hotel, Sioux City. A 6:30 p. m. dinner was served following which Dr. J. Harry Murphy, Professor and Director of the Department of Pediatrics, Creighton University Medical School, Omaha, talked on "Acute Anterior Poliomyelitis."

PERSONALS

Dr. J. C. Denison, who has practiced in Bellevue since 1892, retired recently. His practice is being taken over by Dr. George Wilkinson, a graduate of the State University of Iowa College of Medicine in 1941, who has been a resident at Augustana Hospital, Chicago, the past 18 months.

Dr. Kenneth Gee spoke to the Kiwanis Club of Shenandoah May 12. His subject was, "The Story of Penicillin."

Dr. Horace M. Korns of Dubuque was elected president of the Iowa Clinical Medical Society at its semi-annual meeting May 17 in Dubuque. Other new officers are Dr. E. L. DeGowin, Iowa City, vice president, and Dr. H. J. Smith, Des Moines, secretary-treasurer.

Dr. Aileen E. Mathiasen of Council Bluffs has been elected president of the Nebraska branch of the American Medical Women. Dr. Elinor Marsh of Council Bluffs has been named secretary-treasurer of the organization.

Drs. M. L. Mosher and Stephen C. Ware of West Branch have announced their association in the practice of medicine and surgery. Dr. Mosher practiced in West Branch several years preceding his military service and Dr. Ware has been working with his father in that city as well as maintaining his own office in Iowa City for the past few months.

Dr. R. E. Olson has opened an office for the practice of medicine in Milton. Dr. Olson received his training at the State University of Iowa and was recently discharged from the army in which he had served 18 months.

Dr. E. D. Plass, Professor and Head of Obstetrics and Gynecology at the University of Iowa hospitals, was one of fourteen American doctors to be awarded the Order of the White Lion, Czechoslovakia's highest honor. Dr. Plass became eligible for the award through participation in the Unitarian service committee medical teaching mission to Czechoslovakia last summer.

Dr. Frank H. Reuling was elected president of the Waterloo Medical Society at the annual election of officers following a luncheon of the group May 28 in Black's Tea Room, Waterloo. He succeeds Dr. Charles A. Waterbury, Jr. Dr. Paul T. O'Keefe was named vice president, with Dr. R. S. Gerard and Dr. George C. Murphy re-elected secretary and treasurer.

respectively. Elected to a three year term on the board of trustees was Dr. F. Harold Entz, and beginning a three year term as censor was Dr. Howard J. Hartman.

Dr. Cecil W. Seibert of Waterloo was elected president, Dr. Wilbur C. Thatcher of Fort Dodge, vice president, and Dr. John H. Randall of Iowa City, secretary-treasurer of the Iowa Obstetrical and Gynecological Society at a recent meeting.

Dr. M. A. Troxell of Hawarden became associated with Dr. Edmund D. Beatty and Dr. George H. Keeney of Mallard on June 1. Dr. John M. Schutter, who has been associated with these doctors, is opening offices in Algona.

Dr. Richard A. Young and Dr. Robert Eaton opened offices for the practice of medicine in Clarion May 12. Both are graduates of the State University of Iowa College of Medicine with the class of 1943 and served in the Army Medical Corps.

Dr. Edward Zimmerer, Director of the Division of Cancer Control, Iowa State Department of Health, spoke at the Cass County Rural Women's Day program in Atlantic May 6. He talked on the prevalence and treatment of cancer.

Three new faculty members have been added to the staff of the State University of Iowa College of Medicine. The members, who will participate in the program of the application of nuclear physics to the cure of disease, are Dr. Titus C. Evans, Dr. Stuart P. Barden, and Dr. Clinton D. Janney.

Ten doctors who form the staff of the new Hoven-den Memorial Hospital at Laurens are: Dr. H. L. Pitluck, Laurens, president; Dr. George H. Keeney, Mallard, vice president; Dr. J. M. Rhodes, Pocahontas, secretary-treasurer; Dr. R. E. Almquist, Albert City; Dr. T. R. Campbell, Sioux Rapids; Dr. R. J. Brink, Ayrshire; Dr. E. D. Beatty, Mallard; Dr. E. A. Rust, Webb; Dr. F. E. Heathman, Pocahontas; Dr. W. F. Brinkman, Pocahontas; Dr. F. J. Anderson, Rolfe; Dr. C. L. Jones, Gilmore City; Dr. J. B. Thielen, Fonda; Dr. M. A. Troxell, Mallard; and Dr. T. G. Herrick, Gilmore City.

DEATH NOTICES

Kennedy, Edward Phillip, aged 65, of Swaledale, died May 27 in a Mason City hospital following a short illness. Dr. Kennedy was graduated from the State University of Iowa College of Medicine in 1912 following which he practiced in Swaledale thirty-five years. He was a member of the Cerro Gordo and Iowa State Medical Societies at the time of his death.

Porstmann, Louis John, aged 82, of Davenport, died May 21 in Ford Hospital, Detroit, following a lingering illness. Dr Porstmann was a graduate of Barnes Medical College, St. Louis, with the class of 1898, and up to the time of his retirement in September, 1946, had been a member of the Scott County and Iowa State Medical Societies.

Swanson, John Emil, aged 75, died June 1 at his home in Minneapolis following a month's illness. He received his medical degree from the University of Illinois College of Medicine, Chicago, in 1899, and practiced in Sioux City from 1911 until his retirement in 1946. While practicing he was a member of the Woodbury County and Iowa State Medical Societies.

PUBLIC RELATIONS

(Continued from page 284)

pression of their own sponsorship of it. Instances are reported in which, although participating members of the plan, the public has gained the impression from doctors that they are not exactly in accord with the philosophy of it.

As in no other field, the medical profession holds the power to make its plan work. Patients turn to their doctors for advice on all problems from the most trivial to the most important. If John asks his family doctor what he thinks of the new medical plan and he gets an answer somewhat along this line, "Well, John, you are pretty well fixed. Do you think you need it?" John is bewildered. He wonders why he is told the plan is "doctor-sponsored" when his own doctor seems so lukewarm.

The hospitals' plan for hospitalization has gained its enviable position through the wholehearted support of the doctors as well as the fine service experience of those who have used it. The doctors plan can be even closer to the hearts of the people if the doctors will confirm the purpose of it, namely, to give people a chance to budget for the catastrophic costs of medical and surgical care. With full confidence and a firm belief in the Plan we can prove that not only the people of Iowa but of the nation do not need the costly experiment of government-controlled medicine.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p. m.

WSUI—Thursdays at 2:45 p. m.

July 2-3	Sun Stroke and Heat Exhaustion	J. H. Coddington, M.D.
July 9-10	Hot Weather Meals	Eleanor Larson, Dietician
July 16-17	Hay Fever	Lawrence J. Halpin, M.D.
July 23-24	Care of the Teeth	A. N. Humiston, D.D.S.
July 30-31	Not scheduled	

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No. 8

HISTORY OF TREATMENT OF POLIOMYELITIS

Ralph K. Ghormley, M.D., Rochester, Minn.

A statement in the introduction to the book on infantile paralysis by Pohl and co-author¹ has prompted the preparation of this review. That statement is as follows: "Tradition has regarded infantile paralysis as a disease whose main characteristic was that the connection between the muscles and the central nervous system was interrupted and tended to disappear. No more was known than that." On such a premise almost any type of case could be built. As a matter of fact, if one explores the American literature one will find a great amount of information, much of which has been overlooked or forgotten. I believe that the disease has been studied in this country in a more thorough manner than in any other country. This information cannot be overlooked entirely.

A most excellent summary of the knowledge developed up to the time of its publication can be found in "Poliomyelitis,"² a volume published in 1932 and edited by the International Committee for the Study of Infantile Paralysis. In the historical summary contained in this volume it is pointed out that various records point toward the fact that anterior poliomyelitis occurred in ancient times. There is some dispute about who should be credited with first describing the disease. Underwood,³ an Englishman, is so credited by many. Others are credited with describing though not naming the condition until in 1840 Jacob Heine⁴ of Cannstatt published a monograph, evidently the first edition of the first monograph ever published on poliomyelitis. Heine noted as prominent features in every case: (1) the age of the patient (6 to 36 months); (2) the good general health preceding the illness and the strong and "blossoming" bodily constitution of the patients; (3) the congestion, febrile irritation and convulsive manifestations which, in the majority of cases, pre-

ceded the paralysis; (4) pain; (5) the fact that in most cases the first result of the affection was paralysis of both lower extremities, and so forth.

According to an editorial in the *Journal of the American Medical Association*⁵ "In 1843 George Colmer reported the occurrence in the fall of 1841 of some ten cases of paralysis in teething children in the parish of West Feliciana, La. This report has been regarded as the first record of an epidemic of infantile paralysis."

Much of our knowledge of the disease in this country was gained from the monograph by Wickman,⁶ which has been translated into English and which should have a much wider reading than it evidently has received. In this Wickman said: "Surprisingly little further progress in our clinical knowledge was made until Medin published his celebrated observations on the Stockholm epidemic of 1887. Medin recognized, in addition to the already familiar spinal form, a bulbar, a polyneuritic, an ataxic and an encephalitic type."

The first great epidemic appeared in 1905 almost simultaneously in Norway and Sweden. Wickman fully reported this epidemic. Previously epidemics had been described by Bergenholtz in 1881 and Caverly⁷ in 1894. It is interesting to note that in reporting this epidemic of 123 cases, in Vermont, Caverly stated that of this number 110 patients were noted to have had some sort of paralysis and that, at the time of his report, 50 of these had fully recovered. Thus Caverly is credited by most American writers with being the first to describe the abortive form of poliomyelitis. Ten patients had died and 50 apparently were permanently disabled to some degree. It is also interesting to note that Caverly stated: "There have been many deaths among horses, attended with symptoms of paralysis, and in which at least one veterinarian tells me he found meningitis." Wickman stated that "The interesting fact has, moreover, been established that the virus of acute poliomyelitis cannot be classed among the common bacteria, for it passes through bacterial filters such as the Berkfeld." Other statements from Wickman's monograph are as follows:

¹Presented before the Ninety-Sixth Annual Session, Iowa State Medical Society, Des Moines, April 16, 17, and 18, 1947.

²Reproduced, by permission of the copyright owners, from: Lectures on regional orthopaedic surgery and fundamental orthopaedic problems. Ann. Arbor, J. E. Edwards, 1947, pp. 151-160.

Pathogenesis

Charcot and Joffroy [1870] . . . taught that acute poliomyelitis was a parenchymatous process . . . In Charcot's day, as only cases of long standing were examined, the opinion prevailed that the disease produced a purely motor paralysis. Hence, little attention was paid to the observations of Roger and Damaschino [1871] who laid special stress upon the interstitial nature of the changes, but who left open the question why the changes were limited to the anterior horns. . . .

Symptomatology

. . . As a rule, Heine-Medin's disease begins quite suddenly, with fever and malaise. Tenderness is a frequent and prominent feature. Pain, headache, stiffness of the neck and spontaneous pains in the limbs appear. . . .

. . . After a few days the patient may recover without further symptoms: such is the typical course in abortive cases. . . .

. . . According to the course of the disease, the seat of the paralysis, the predominance of isolated symptoms, and other features, I have distinguished the following forms of Heine-Medin's disease:

1. The spinal poliomyelitic form.
2. The form resembling Landry's paralysis.
3. The bulbar or pontine.
4. The encephalitic.
5. The ataxic.
6. The polyneuritic (resembling neuritis).
7. The meningitic.
8. The abortive.

. . . Careful inquiry reveals that most of those children [that is, those who have "morning paralysis"] present prodromal symptoms, which sometimes, however, are so slight as to evade notice till the attention of the relatives is specially directed to them. . . .

. . . After mild initial symptoms, some patients develop extensive and severe paralysis; some even die. Others, after an alarmingly severe onset, soon recover, without a trace of the affection they have undergone. . . .

Besides the fever . . . drowsiness, general tenderness, stiffness of the neck and marked perspiration often appear. . . .

More characteristic than drowsiness is diffuse tenderness, which perhaps is the most noticeable symptom that in the initial stage directs our attention to the likelihood of Heine-Medin's disease. . . . This hyperesthesia is in many instances the most marked symptom in the initial stage. It is usually increased by passive movements, especially in my experience, by movements of the vertebral column, such as rising. . . .

. . . Hypotonicity is often an invaluable aid to diagnosis. . . . But hypotonicity, however, is not of invariable occurrence. Occasionally, in a paretic limb, one group of muscles may be hypertonic. . . .

. . . In abortive cases simultaneous with the usual complaint of headache is that of pain in the neck. Rigidity of the neck muscles is often then detected. In the abortive case not infrequently symptoms perhaps attributable to meningeal irritation arise. . . .

The abortive type is of great importance especially as regards the epidemic behavior of the malady. Obviously, the spread of the disease presents a totally different aspect if we consider not only the typical but also the abortive cases.

In Wickman's report of 699 cases in which the patients were between 6 and 11 years of age, 15.3 per cent were abortive, whereas in 299 cases in which the patients were between 12 and 32 years, 16.4 per cent were abortive. Leegaard^{8,9} reported that 34.31 per cent of his cases in which the patients were less than 15 years of age were abortive and 26 per cent of the cases in which the patients were 15 years of age or more were abortive.

In Wickman's cases of the 1905 epidemic, at the end of one and a half years 56 per cent of the 550 patients reported paralyzed had some residual paralysis and 44 per cent had recovered completely. Leegaard (1905) reported that 26.87 per cent of his paralyzed patients got well. To quote further from Wickman:

Therapy. . . . The nerve irritative phenomena soon disappear in most cases, and may be treated with internal remedies without apparent detriment to the patient. . . .

. . . I join with Oppenheim in advising that sweating be produced, not by baths which necessitates moving the patient, *but by packs* [my italics], hot drinks, etc. . . .

During the reparation stage attention is especially directed to avoiding the development of contractures. . . . We must see that the bed-clothes do not press upon the patient's feet. The feet should be kept at right angles.

Besides preventing such sequelae as contractures, active physical treatment should be commenced. Bathing, massage, passive and active movements, and electrical stimulation may be useful.

. . . The chief aim of the baths is to improve the general condition. For this purpose ordinary warm water baths are used, but brine, mud, or chalybeate [charged with iron] baths may later be serviceable. . . . Passive movements not only improve the circulation in the muscles, but also help to prevent the occurrence of contractures. Active movements must be adjusted to the degree of paralysis. If only a paresis be present, resistance movements can be employed from the beginning. Manual resistance is at first preferable as it can easily be graduated to correspond with the strength of the muscles. Later, apparatus for exercising may be used. . . .

Electrical treatment . . . is not to be compared

in efficacy with the others. It often causes great uneasiness in children and it is questionable if its value materially compensates for the mental stress it involves.

In discussing treatment Ruhräh and Mayer¹⁰ mentioned that rest, protection of the patient from bedclothes with frames and application of heat are of value in combating pain and tenderness. The part may be wrapped in flannel and heat supplied under the bedding frame by using some of the electric devices, by hot water bottles or the like or by hot sand or salt bags. "Another thing which often gives great relief is to have the patient placed in a very warm bath." This, they noted, is a very old form of treatment and was mentioned by Badham¹¹ (1835), whose observations led Heine to his first description of poliomyelitis.

One of the earliest and most accurate descriptions of poliomyelitis to be found in the American literature is in a monograph by Peabody, Draper and Dochez.¹² This summarized the work in the Hospital of the Rockefeller Institute during the summer of 1911. There were 161 cases from that season and 22 cases from previous years. The descriptions emphasized the numerous variations in the clinical picture but Peabody, Draper and Dochez offered the following classification:

1. *Abortive cases*: Cases in which the patient never becomes paralyzed.

2. *Cerebral group*: This group contains all cases in which involvement of the upper motor neurone with resulting spastic paralysis is the chief characteristic.

3. *Bulbospinal group*: This comprises all cases in which there are lesions in the lower motor neurone and flaccid paralysis.

Peabody, Draper and Dochez further stated: "Following the incubation period and preceding the onset of paralysis, there is, in the vast majority of cases, a period marked by prodromal symptoms . . . It is during the prodromal period that one must isolate and quarantine, if such measures are expected to be efficacious, and it is only in the prodromal period, before an extensive destruction of nerve cells takes place, that one can ever hope to make treatment efficient."

They stated that prodromal symptoms of fever and sweating were emphasized by Müller but sweating was found in only 25 per cent of their own cases. Other symptoms were drowsiness, irritability and hyperesthesia, all of which were very frequently found in their cases. Stiffness of the neck and a positive Kernig sign were very constant.

Likewise these authors emphasized the variability of these symptoms in an epidemic and from

epidemic to epidemic. They stated that hyperesthesia is the most common symptom in the prodromal stage and that "three types of pain are found: spontaneous pain, pain caused by manipulation, and tenderness to pressure of the muscles and nerve trunks."

Under treatment they stated:

Contractures begin to develop early in poliomyelitis, and it is essential that they should be guarded against from the onset. . . .

. . . *Heat, and especially baking* [my italics], also exert a good influence on the circulation. With massage, passive motion is used, the rhythmic performance of certain movements stimulating the patient to try to attempt them himself. Of all methods, however, by far the most valuable one is active movement, or muscle training. . . .

. . . Frequently, the children use their limbs better when they are in a warm bath than when in bed. . . .

. . . Coincident with the absorption of the exudate, improvement is often quite rapid during the first weeks and months; then follows a long period which may be intensely discouraging in its apparent results, a period in which improvement is probably due to muscle training and to the assumption of new functions by the surviving nerve cells.

In another monograph Draper¹³ stated:

One physical sign of great importance, however, must be mentioned especially at this time. It depends on the fact that in acute poliomyelitis any manipulation which brings about anterior bending of the spine causes pain and therefore is resisted by the patient. The resulting stiffening of the body has generally been loosely described as "stiff neck" or "Kernig's sign," but there is an essential difference between these reflex phenomena of meningeal irritation and the voluntary protection rigidity assumed by the patient with poliomyelitis to prevent anterior flexion of the spine. [Draper has called this the "spine sign."]

Heretofore it has been the habit of physicians to wait for a confirmatory paralysis to establish the diagnosis of poliomyelitis. Such delay, of course, is not now permissible, since the hopeful possibilities offered by serum therapy have arisen. Consequently it is necessary to recognize the disease at the earliest possible moment, preferably while it is still in the general systemic phase.

In another interesting monograph written in 1912 Vulpius¹⁴ noted among other things:

Symptomatology

Onset.—As a rule, the onset of the disease is very acute, but sometimes vague prodromal symptoms are present for several days before the well-known clinical features of the illness manifest themselves.

The temperature rises sharply to 102 F. or so, remains at this level for a few days, and then gradually falls. Sometimes there is an initial rigor. Neither the pyrexia nor any of the other early symptoms have any prognostic value. Profuse sweating is not uncommon, and drowsiness or even coma is fairly frequently observed. Headache is almost always present; it is often occipital. Later on, pain in the nape of the neck and backache set in, and some stiffness of the spine, indicative of meningeal irritation. The pain may be so severe that the patients dread the slightest movement or disturbance. Hyperaesthesia of the extremities is not uncommon, and the patients complain of severe pain in the arms and legs when they are touched. The muscles and nerves are peculiarly susceptible to pain, and this hyperaesthesia . . . may persist for many weeks or even months. . . .

Deformity and Contracture.—The most interesting stage to the orthopaedist is that of recovery after the first onset, for it is then that paralytic deformity and contracture begin to appear.

The causation of paralytic contracture is not easy to explain. Various theories have been advanced, and the resulting controversy has been keen. The fact is that none of the explanations offered is sufficient to explain the whole difficulty, but there is an element of truth in all of them. In order to understand them properly, we must go back to the physiology of the muscles. But here we are at once confronted with the difficulty that physiologists themselves are not agreed on the point. There can be no doubt that the normal position of a joint in the living body is determined and maintained by the equilibrium subsisting between the various muscles surrounding the joint. But how is it brought about? Mainly by the elastic tension of the muscles and tendons—that is to say, by a mechanical force—but also by muscular tone, a factor whose existence has been frequently denied, but which appears, according to recent work, to come into play. We have proof of its existence every time that we perform tenotomy of a tendon. The muscle retracts as soon as it is divided, and the gap between the two ends of the tendon affords a measure of the previous degree of tension on the muscle. Retraction also occurs in the antagonist, because it cannot extend fully after a contraction, without the help of its opponent. The same thing happens in muscular paralysis, but the causation of the contracture varies according as the paralysis is partial or complete.

Total paralysis is followed by relaxation of the joint capsule; flail-joint ensues, and the position of the peripheral part of the limb is solely controlled by its weight. If one posture is maintained uncorrected for any length of time, shortening occurs in those muscles whose points of attachment have been approximated. In time the bones also become adapted to the new position, and osseous deformity ensues. In the case

of partial paralysis, the mechanism is different. When the contractility of a group of muscles is impaired by paralysis, the opponents fail to relax properly in response to the voluntary nervous impulse, and a residual shortening is left, which gradually develops into the permanent contracture. In certain cases, however, the overstretching may be the result of gravity; for instance, the dorsiflexors of the ankle may be elongated by the weight of the foot, in consequence of paralysis of the calf muscles. . . .

The muscles of the affected parts of the limb show very marked changes. They decrease very rapidly in size, and exhibit degenerative atrophy of variable distribution and severity. The normal fibers are distinguished by their bright red colour, whilst the degenerate ones are of a yellowish-white hue, caused by the fatty degeneration of their substance. . . .

After detailed discussion of treatment, Vulpinus stated:

In addition to electricity, massage, and gymnastic exercises, the various methods of inducing local hyperaemia may be employed with advantage. Warm baths, hot limb baths, hot and cold douches, *wet or dry hot packs* [my italics] (the latter being most easily arranged as thermo-compresses, or baths of hot air, sand, or earth), mud baths, Bier's hyperaemia, for an hour at a time, and friction of the skin with spiritous liniments—all these methods serve the same purpose of improving the circulation of the limb, and may be employed with advantage separately, or in combination.

Due provision must be made, too, for the proper protection of the limb from cold.

A paper full of illuminating facts but less well known than some of these others is one written by Wilbur¹⁵ and published in 1912. Wilbur noted that the etiologic agent is a virus and he emphasized that the disease is an acute infectious one which involves much of the body. He noted that the "variability of poliomyelitis is one of its most puzzling and evident features." He further stated that the order of the following list represents the average importance from a diagnostic standpoint of the early symptoms: (1) hyperesthesia with local or generalized tenderness; (2) pain (muscular pain described as "aching" or "cramp-like"); (3) fever; (4) stiffness of the neck and back ("All of the early cases seen by me have shown to a greater or less degree rigidity of the spinal column and stiffness of the neck."); (5) profound, often inexplicable, general bodily weakness; (6) headache; (7) abnormal mental states; (8) muscular twitchings; (9) sweating; (10) gastro-intestinal symptoms; (11) vesical or rectal symptoms; (12) circulatory disturbances; (13) muscular incoordination; (14) symptoms referable to the respiratory tract; (15) skin eruptions;

(16) sensory disturbances; (17) early stage of paralysis; (18) abnormal reflexes; (19) changes of the cerebrospinal fluid; (20) leukopenia or leukocytosis; (21) changes of the urine; (22) serologic reactions.

Elaborating on some of these symptoms and signs Wilbur said: "Over the abdomen the sudden release of the skin after pinching it up is accompanied by a marked distress. It is difficult to distinguish the pain that comes from a true hyperesthesia of the skin from the spontaneous pains in the muscles which are later affected." Wilbur noted that pain "probably plays a large part in causing the unusual willingness shown at times by strong, healthy appearing children to remain practically motionless in bed when first affected by the disease. This unwillingness, not inability, to move is of much value in diagnosis in young children unable to report their sensations."

Regarding muscular incoordination Wilbur said: "Inability to stand or to walk, a sudden fall, or clumsiness with the hands, may be the first symptoms of poliomyelitis, and a certain amount of failure to perform complicated body movements is a fairly constant finding at some period of most cases. Previous to the paralysis the measured way in which simple movements are begun, the feeble and evidently fearful manner in which they are carried out, is of much value in diagnosis."

Another important monograph in the earlier American literature on poliomyelitis is that of Lovett.¹⁶ The following excerpts from this book are worth quoting here.

Pathology

... In short, it must be remembered that infantile paralysis is a general toxemic process which affects organs throughout the body but which apparently acts mildly; and on the other hand it is characterized by lesions in the spinal cord which occasionally prove fatal by involvement of the nerve cells controlling respiration; these changes generally lead to a greater or less impairment of motor function of certain of the cells controlling muscular action, most often in the legs. The great tendency toward spontaneous repair in this disease is explained by the pathology, which shows also why partial paralysis is so much more common than total.

Symptoms

... The symptoms are in general those of an acute infection. In many instances, however, gastro-intestinal symptoms predominate, while in others those referable to the respiratory tract are the most marked. Stiffness of the neck to flexion of the head, sweating, marked nervous irritability and general hyperesthesia are pres-

ent in many instances before the onset of the paralysis, but they are not at all constant. . . .

The abortive type may next be taken up as second in importance. This type was originally described by Dr. C. S. Caverly,^{17, 18} of Rutland, Vermont, as follows:

It will be seen by these tables that six of these cases had no paralysis, as stated, but that all of them had distinct rigidity of the spinal muscles, strabismus, or other symptoms referable to the nervous system, and are therefore included in this report.

... The characteristic of the abortive cases is, however, that they are not followed by a frank paralysis. . . .

It is undisputed that cases which are undoubtedly infections of this abortive type are very common during epidemics, and that they are frequently unrecognized. Wickman found 25 to 56 per cent of abortive cases in the total incidence of the disease, which figure he considered far too low, and he was supported in this opinion by Müller, who believes that the abortive cases would outnumber the cases of frank paralysis. . . .

Treatment

... In the convalescent phase which will carry us practically two years from the onset our efforts are concerned chiefly with the restoration of muscular power and the prevention of deformity and as a rule only minor operations are to be performed in this period. . . . The considerations governing its management are as follows: Many muscles are weakened and some are wholly paralyzed because of injury to certain nerve centers. Weakened muscles may be strengthened by muscular exercise and, in addition to this, impulses sent from the brain to the muscle may be trained to find new paths. This is because the communications between the nerve centers and the connections between the nerve centers and muscles are very extensive and intricate and because most often not all the centers controlling one muscle are wiped out. As a result of this, muscle training in this period is physiologically sound, and practically of great value, and reinforces and establishes the normal spontaneous improvement. . . .

Tenderness, which so commonly exists, is to be accepted as evidence of congestion and irritation of the cord, and consequently of a process still active. . . .

At this period [the latter part of the acute phase] a warm bath is generally of benefit because the buoyancy of the water diminishes the weight of the limbs and permits motion which is not possible out of water because the limbs are thus supported. . . . Immersion in a bath is not desirable during the first two or three weeks of the paralysis but may be used before tenderness has wholly gone, the patient being lifted into the bath on a sheet. . . .

The prevention of contractions and early deformity is of great importance at this stage of the affection, for such contractions may occur early and are on the whole evidences of neglect and lack of proper surgical care. This is not the case in regard to scoliosis. . . .

If the anterior muscles of the leg, or most of them, are affected, and the posterior escape injury, the non-antagonized healthy muscles will by virtue of their tonicity draw the foot into a position of equinus and hold it there, and shortened muscles will, in time, become permanently contracted, although not paralyzed, while lengthened muscles will become permanently stretched, and a fixed deformity will result.

A word should be said about the great epidemic of 1916. During this year there were reported in the United States 28,767 cases and of these 13,223 were in New York State. A report on this epidemic is contained in the records of the Health Department of New York State. In New York City there were 8,928 cases from June 1 to November 1, 1916. There were 2,407 deaths in Greater New York, a case fatality rate of 26.96 per cent. Many of the most elaborate publications followed this epidemic and much scientific knowledge regarding the disease was gained from the various studies made.

While the 1917 edition of Lovett's¹⁶ book is often quoted as the last word from him on the subject it should be noted that he lived eight years after the publication of this work and wrote many papers on the subject of poliomyelitis. Many of these contain information of great value to the student of the disease.

From one paper published in 1922 I quote:

Muscle training forms the basis of the modern treatment of poliomyelitis. In theory it consists of an attempt to make the patient send a voluntary impulse to contract a muscle, and of aiding the muscle in contraction by passive movement by placing the limb in such a position that gravity aids in performing the movement, and by the assistance of the hand.

There is one very important point in this connection that is often lost sight of. In an affected limb some muscles are as a rule paralyzed, some weakened, and some comparatively normal. The muscles that we wish to exercise are the muscles that are paralyzed or weakened. If the exercises are not carefully controlled and located, the patient is sure to use the strong muscles instead of the weak ones, to develop these, and thus to make the muscular balance still worse. Loosely given exercises by untrained persons, and encouragement to the child to keep around and do anything he can, are likely to do harm rather than good.

During the years of my association with Lovett acute anterior poliomyelitis was treated in a considerable number of cases. Early warm baths

were used to relieve the patients of tenderness and irritability. As soon as these symptoms had subsided the restoration of muscle function and balance was commenced by means of muscle training along the lines indicated previously. Contractures were constantly watched for and prevented by active stretching. Braces were used when indicated but a quotation from one of Lovett's papers should be emphasized. "Braces should not be used unnecessarily, but . . . should be used when needed: . . . they are not in any way therapeutic, but protective and conservative, and . . . the so called 'brace treatment' at this stage of infantile paralysis does not exist, because to put on a brace is no more treatment of the disease than is the use of crutches in the treatment of fracture of the leg."

One of the manifestations of infantile paralysis that seems to have been lost sight of is "stretch paralysis." It has been known for years that in some instances if contractures are relieved either by stretching or by tendon lengthening the apparently paralyzed opponent muscle may recover power. An excellent description of this phenomenon may be found in a paper published by Sir Robert Jones¹⁹ in 1911.

We have been taught that a muscle which exhibits the reaction of degeneration is in such a state that it cannot recover voluntary power of response. Many years ago I drew attention to several recoveries in muscles which displayed this reaction, and this has been borne out by many observers, including Hoffa, König, Lange, and others, and has been proved both clinically and histologically by Koch. . . .

Acute poliomyelitis of course often permanently destroys motor cells in the anterior horns of grey matter, and the muscles dependent upon them are forever useless unless nerve transplantation in the future may come to their rescue. This complete destruction, however, is fortunately the rarer condition, and from the clinical evidence we have of rapid and complete recoveries from complete paralysis, and the very many partial recoveries, it would appear that the cells have generally suffered from temporary injury rather than from destruction. . . .

Overstretching of Muscles

When a muscle governed by a live cell fails to act, we may call it a case of functional disability. Now, what is the cause of functional disability in a muscle? The great outstanding cause is overstretching. The surgeon has to find out the difference between a truly paralyzed muscle and a muscle overstretched, and herein lies the fundamental principle which should guide us in the treatment of infantile paralysis. If the practitioner from the first disappearance of acute symptoms could prevent the weak muscular

groups from being stretched, paralytic disabilities and deformities would be comparatively rare.

Later Jones quoted from a paper by Dr. Wittig (of Graz) written in 1907, giving an instance of such a stretch paralysis.

As has been noted previously, the variability of the extent of paralysis in individuals as well as of the mortality rate is great when considered from epidemic to epidemic. High incidence of bulbar paralysis may be encountered and at times a higher rate of involvement of the upper extremities. Epidemics have been noted in which there was a high rate of encephalomyelitic cases and all sorts of variations may be observed. For this reason any statistics based on a series of cases from one epidemic are not a reliable guide to the over-all picture.

Harmon²⁰ reviewed the results of serum therapy in an excellent article and from this paper some tables reveal the amount of recovery without paralysis which may be observed.

Many varieties of treatment of poliomyelitis have been described in this country in the early twenties. Various papers by Lovett²¹ and later by Legg have outlined in detail the method used by the Clinic of the Harvard Infantile Paralysis Commission and used at the Children's Hospital in Boston. This method has been followed by many persons treating infantile paralysis with, of course, individual variations.

The value of exercises in water was greatly emphasized through the twenties. Miss Margaret Pope,²² victim of infantile paralysis, who felt that she was greatly benefited by such exercise, wrote an article on this subject in 1924. The establishment of the Georgia Warm Springs Foundation with its center for treatment of poliomyelitis at Warm Springs, Georgia, was given wide publicity and much newspaper comment. In the early days of this institution, rumor became widespread that radium in the water of the springs had some curative effect. I recall one patient, a student at the Massachusetts Institute of Technology, who returned from Warm Springs bringing several bottles of water for analysis to determine the radium content.

Lowman was a great advocate of the use of pools and wrote and talked frequently on this subject. The result of all this was the widespread construction of therapeutic pools. The Hubbard tank is a small therapeutic pool which has been widely used because of its size and comparative simplicity. It was described in the medical literature by Blount and Elson²³ and was designed by Mr. G. E. Hubbard of Evanston, Illinois.

About 1933, a flurry of interest in the use of

prolonged fixation in casts came as a result of the visit to this country of Dr. Jean McNamara, a physician from Australia. I have not been able to find any references to this in the American literature but she was given considerable publicity, including an exhibit, at the meeting of the American Medical Association. I was never impressed with this method of treatment although I have seen patients treated by this method who have recovered completely with excellent function.

The invention of the respirator by Drinker and McKhann²⁴ in 1929 gave a valuable addition to the treatment of bulbar poliomyelitis, as it is recognized that, although most of the deaths in an epidemic are in this group, many of the patients, if they survive the acute phase of the disease, make splendid functional recoveries.

A regimen of care for victims of poliomyelitis known as the Kendall treatment was evolved in Baltimore, where Mr. and Mrs. Kendall are the physical therapists at the Children's Hospital School. This method has been outlined by the Kendalls²⁵ in a Public Health Bulletin and has received considerable recognition. It consists of a combination of muscle training with splints. In the hands of those who used it carefully and who understood it, good results were obtained.

A regimen of care developed during a large epidemic in Ontario, Canada, in 1937 has been described by LeMesurier.²⁶ This method was developed in the face of an extremely limited trained personnel. It is based largely on instructions to local physicians and nurses on the application of standardized splints and the use of physical therapeutic measures. While not ideal, the method served well in what seemed an overwhelming emergency and in nine months 65 per cent of the patients had recovered completely.

Conclusions

I have attempted to show from excerpts from the literature of the past fifty years that the story of anterior poliomyelitis has been told over and over again and that the literature emphasizes the fact that the disease is a complex one with great variations in its symptomatology and in its clinical manifestations. Such variations are noted not only from epidemic to epidemic but from case to case within the same epidemic.

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EPIDEMIOLOGY OF POLIOMYELITIS

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In attempting to discuss the epidemiology of poliomyelitis or of any other infectious disease of man, one can do little more than to collect the many diverse and often conflicting facts and to attempt to weave them into an hypothesis or theory which appears to explain the total occurrence of the disease. Since we can never actually observe the spread of micro-organisms from one host to another nor witness the migration or progress of these same organisms within the invaded body, we must reason by inference. The epidemiologist must advance his hypotheses, test them against the known facts regarding the occurrence of the disease and momentarily cling to that hypothesis which is most consistent with these facts. Thus, he infers that typhoid fever may be spread through the medium of water, milk or food because it acts as though it were so spread,

and he concludes that measles is spread through the secretions of the respiratory tract because it occurs as though it were so spread. His deductions may or may not be supported by bacteriologic evidence of the occurrence of the organism under certain conditions. The deciding factor in his conclusions is the known facts of the occurrence of the disease, for no hypothesis, however plausible bacteriologically, can be accepted if it fails to be consistent with these facts of occurrence. There is thus a sharp difference between a bacteriologic possibility and an epidemiologic probability.

It should be stressed at the outset that the epidemiology of poliomyelitis is not known and that there are widely variant ideas regarding it. The absence of a suitable laboratory animal, of a suitable test for the diagnosis of subclinical or abortive infections and of a satisfactory test for past infection has greatly retarded progress. In spite of these defects in our working tools, a vast array of factual data has been assembled. As a matter of fact, this array of specific information regarding poliomyelitis is far greater than that for many other diseases that are generally supposed to be well understood. Thus, we know far more about the occurrence of poliomyelitis than we do about measles, chickenpox, mumps or whooping cough, more than about the streptococcal infections. Yet ironically enough, the type of sketchy data on which our deductions regarding the epidemiology of measles or these other diseases are based is considered inadequate with respect to poliomyelitis. We have either oversimplified with respect to such diseases as measles or we have overcomplicated our concepts with respect to poliomyelitis.

So long as we thought of poliomyelitis solely in terms of the paralytic type of infection, it was inevitable that a great aura of mystery should surround the disease. The intermittent occurrence of a few scattered and apparently unrelated cases did not lend itself to ready explanation. The earliest writers about the disease suggested, however, that the easily recognized paralytic cases did not represent the total infection. Our biggest advance of the last three decades has been the general proof and acceptance of the fact that the paralyzed cases constitute only a very small fraction of the total. We learned to recognize the so-called "preparalytic infections" in which there is demonstrable involvement of the central nervous system without paralysis. Later we recognized the abortive or subclinical infections characterized at most by a vague febrile disturbance and possibly occurring without any demonstrable clinical reaction. Coincidental with every outbreak of poliomyelitis there is an enormous num-

ber of these latter cases. In fact, the number of such atypical illnesses among the family contacts of a recognizable case is numerically about the same as with a case of measles.

Today we have come to a very common acceptance of the idea that poliomyelitis virus infection is a widespread disease, probably as common as measles, and that the paralytic cases represent only a very small fraction of this total. Estimates of the ratio between unrecognized and recognized infections range all the way from ten to one to a thousand to one during any given epidemic period. It seems probable that the ratio varies considerably depending upon the community and its past experience with the disease.

If this concept be correct, deductions based solely on a consideration of the paralytic cases may obviously give false conclusions inasmuch as these represent only that small fraction of the individuals who respond badly to the infection. The factors that condition this poor response may be very different from those that underlie the spread of the virus throughout the community. For example, it is not beyond the realm of possibility that the seasonal, age and geographic distribution of poliomyelitis virus infection may not be the same as that of paralytic poliomyelitis; the portal of entry and the mode of spread might likewise be different. It is important, therefore, that we be most cautious in our deductions from the facts that are currently available. With this word of caution it is permissible to examine some of these well recognized facts.

Poliomyelitis is apparently not a new disease but rather one of considerable antiquity which has only recently impressed itself upon our consciousness. It is found in all parts of the world but in general appears to occur in its paralytic forms more commonly in the temperate than in the tropical zones. A few years ago tropical or subtropical outbreaks had not been recognized, but the recent outbreaks in French West Africa and Mauritius and the well demonstrated cases in India, Egypt and Malta have made us realize that the disease occurs far nearer the equator than we formerly believed.

Recognizable outbreaks occur at irregularly spaced intervals, most commonly during the summer and early fall. Yet these outbreaks represent only a portion of the disease, for there is good evidence that in areas where poliomyelitis is endemic, infection occurs at all seasons of year. Some investigators have even suggested—and on very good grounds—that the infection occurs in epidemic form at all seasons but that the proportion of paralytic cases is much higher during the summer months. Certainly there is much evidence

to suggest that certain communities which appear to be spared the ravages of a particular epidemic wave may derive their apparent protection from the fact that the disease had been widespread in unrecognized abortive form during the preceding winter months. If this hypothesis be correct, the seasonal incidence of the reported disease may be a function of those factors that determine paralysis rather than of those determining spread of infection. Yet it must be recognized that atypical seasonal outbreaks are not rare as for example those in Elkins, W. Va., November, 1916 to February, 1917; Worcester, Mass., November, 1930 to January, 1931, and Melbourne, Australia, August to October, 1938.

The rise and fall of the epidemic curve of poliomyelitis is likewise quite characteristic. Within a given area the incidence rises progressively for about six to eight weeks and then declines, this decline requiring approximately two to four weeks longer than the rise. The shape of this curve is not altered by any known control measures, nor is it influenced by sudden changes in temperature, advent of frost or other climatic factors. In those areas where the disease begins early it reaches its peak early and dies out early, whereas in those areas where it begins later it peaks later and persists later. In these respects and in the general shape of its epidemic curve it closely resembles measles.

Radial spread is likewise a long recognized and well established attribute of the infection. Although cases may occur here and there with no well demonstrated relationship to other known cases, the bulk of the infections show a regular and progressive spread from one or more initial foci. In this spread outward from a focus the cases resemble the ripples that spread in concentric circles when a stone is dropped into a quiet millpond. Where the splash first occurs, the water first returns to calm, whereas on the periphery ripples continue longer after the initial disturbance has subsided. Poliomyelitis, like measles, follows this same pattern of direct radial spread, described clearly by Frost in his studies of the 1916 New York City outbreak and repeatedly redescribed in accounts of subsequent epidemics. It was clearly apparent in the 1946 outbreak in Minnesota. It would probably be even more evident if we had a true measure of the abortive infections for we might see the progress of the epidemic into outlying rural areas in the late fall and early winter following the more obvious summer outbreak in the centers of population. This radial spread is particularly apparent and significant in the larger metropolitan areas where the disease moves outward in ever widening circles

without regard for such barriers as changes in water supplies, modes of sewage disposal, sources of milk, or other environmental factors to which attention has been directed so often in poliomyelitis research.

The age distribution is very comparable to that of the common infectious diseases that are generally considered to be spread by respiratory association. The incidence declines with increasing age, and in urban areas the infection is acquired earlier in life than in rural areas.

The relationship to physiologic variations has often been mentioned but so far remains unexplained. It seems well established that poliomyelitis of a severe form occurs more commonly in pregnancy than in a comparable group of non-pregnant women. Experimental evidence indicates the increased susceptibility of animals whose endocrine balance has been disturbed, while numerous investigators have described a relationship of the disease to certain physiologic patterns. Aycock has likewise clearly demonstrated that the paralytic form of the disease tends to appear in successive generations of certain family groups in a manner which strongly suggests an hereditary constitutional factor which may increase the likelihood that a given infection will result in a paralytic form of the disease.

All of the above well established facts regarding the occurrence of poliomyelitis strongly suggest spread through rather close and direct association between a source of infection and the new victim of the disease. Careful epidemiologic investigation backed up by virologic studies support this concept of spread through association. A very high proportion of the cases have had close association with either a recognizable case or a person apparently suffering from an unrecognized abortive infection. In all such instances the contact has been during either the late incubation period or the early stages of the recognized illness. Studies of virus distribution further show infection of a high proportion of the close associates of a recognizable case and that the likelihood of such infection decreases with a reduced degree of intimacy with the case. Such observations coupled with the evidence of radial spread, and the relationship of age distribution to degree of community congestion, strongly suggest that spread of infection is through some mechanism of more or less direct association.

The nature of this mechanism is far from clear. Many persons (and I confess to be one of those) lean strongly to the idea of respiratory spread. In support of this hypothesis is the fact that the virus can be demonstrated in the throat during the

late incubation period and early stages of the apparent infection but not at other times, and that all the evidence of spread through association suggests that it is precisely during this period that association with a case leads to infection. By way of contrast there is no evidence whatsoever to suggest spread through comparable association late in the disease or during convalescence when the virus is apparently absent from the throat yet present in abundance in the feces. Indirect support for the hypothesis of respiratory spread is found in the fact that in its age distribution, shape of epidemic curve and radial spread poliomyelitis closely resembles those diseases commonly considered to be respiratory-spread and differs markedly from those apparently spread through other mechanisms.

Rivers has recently advanced the hypothesis of direct spread through unrecognized and microscopic fecal contamination of the hands resulting in a hand-to-mouth transfer. Although the possibility of such transfer is hard to deny, the hypothesis fails to explain the apparent absence of spread during convalescence when the virus is so abundant in the feces and when contamination of the fingers with resultant hand-to-mouth transfer is certainly as possible as in the early stages.

A second hypothesis regarding spread is that of transfer through water, milk or other food contaminated with sewage from an infected person. The only evidence to support such an hypothesis is the fact that virus is found in greater abundance and over a longer period of time in the intestines than in the throat. Virus is also readily recovered from the feces and from the sewage of communities where poliomyelitis is prevalent. On the other hand, there is no outbreak on record in which the distribution of the cases was consistent with the hypothesis that a particular water supply had been contaminated with sewage containing poliomyelitis virus. Actually the radial spread occurs irrespective of water supplies. To explain the widespread outbreak through the entire midwest this past summer we should have to believe that a vast number of public, semipublic and private supplies had been progressively contaminated—a hypothesis that puts a severe strain on credulity. The evidence for spread through food is equally unconvincing. Two or three outbreaks have occurred in which the possibility of spread through milk seems at least plausible though one is forced to concede that the evidence is far from conclusive. No one would deny the theoretical possibility that water, milk or food might on some occasions serve as a vehicle for the spread of poliomyelitis, but it seems impossible to attribute to any of them a

major role in the widespread dissemination of the infection throughout the community.

A third school of thought adheres to the hypothesis that insects—and most probably flies—serve as an important vector and that the bulk of the infection is so spread. In support of this hypothesis are three facts, isolation of virus from flies having access to feces from poliomyelitis cases, the experimental transmission of infection through bananas contaminated by such flies, and the seasonal distribution. The first two establish the fact that poliomyelitis can be so spread but give no evidence to suggest that the bulk of the infection is spread in this manner. The seasonal distribution, with peaks most commonly occurring in late summer and early fall, does not in reality suggest insect spread. The actual peak depends upon the period of onset and within a given area may vary widely from year to year just as it may vary widely in different areas during the same season. Within a single state the peak may range from July to December as occurred in Massachusetts in 1930. The disease may decline and even disappear long before the end of the fly season, whereas sudden frosts or freezes which sharply abort outbreaks of malaria, yellow fever and encephalomyelitis have no effect on the shape of the poliomyelitis curve. It is, therefore, hard to accept the idea that flies or other insects are of appreciable significance in the spread of the virus throughout the community though no one would deny that an occasional case might be so spread.

The evidence so far reviewed would suggest that poliomyelitis is a widespread infection most probably spread by close personal association and possibly by respiratory exchange during the early stages of the disease. Virus infection appears to be about as widespread as is measles, but only a very small fraction of the cases result in paralytic disease. The problem immediately arises as to the reasons why so few are paralyzed even though so many are infected. The mystery of poliomyelitis may well rest not in the mode of spread but in the factors that determine this unfavorable response of a few persons to a virus infection that is so benign for most persons.

Although many ideas have been advanced to explain this unfavorable response, the hypothesis that for the moment claims the largest number of adherents is that of physiologic variants. In 1916 Draper suggested that certain persons were so constituted physiologically that they were particularly likely to respond paralytically to virus invasion. This concept has been expanded in recent years by Aycock who has introduced the term "autarcesis" to refer to the nonspecific physiologic factors that condition the response to infection. The na-

ture of these is certainly far from clear. It has been suggested that they may be of an endocrine nature, so mild as to represent a clinically unrecognized imbalance rather than a gross abnormality. Heredity and diet have also been suspected. The most ardent adherents of this hypothesis suggest—and possibly with good reason—that this autarceologic factor varies with the season. According to this concept a higher proportion of the infections occurring during the summer months may result paralytically and the apparent seasonal occurrence be conditioned by variations in autarceologic factors rather than in mode of spread. More study is needed to determine the accuracy of this hypothesis. It is already apparent, however, that it fits the known facts of the occurrence of the disease better than does any other hypothesis and is, therefore, worthy of far more investigation than has so far been carried on.

At the outset of this paper it was pointed out that the task of the epidemiologist is to weave the known facts of the occurrence of a disease into an hypothesis or theory which explains why and under what circumstances the disease develops. That hypothesis which is most consistent with the facts is the most tenable. It is to be modified or rejected as new facts come to light which are incompatible with it. At the present moment I believe that the best hypothesis as to the epidemiology of poliomyelitis is that of an infection spread by direct association, attacking all persons at some time in life but paralyzing only a small fraction who are physiologically so constituted that there is destruction of the nerve cells. This concept appears to be consistent with the known facts of the disease; no other concept so far advanced is equally consistent. If this concept is correct it suggests that the most fertile field of future research is to be found in a study of those physiologic factors that condition the unfavorable response to the virus.

DIAGNOSIS OF POLIOMYELITIS

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The diagnosis of poliomyelitis may be very simple, presenting few or no difficulties, or it may be extremely difficult, in fact impossible without the aid of unusual laboratory assistance. It is usually easy in times of epidemics, and difficult in off-seasons, but even during an epidemic there is a risk of a false diagnosis because of too ready acceptance of neurologic symptoms or of pseudo-paralysis as being due to poliomyelitis.

The usual classification of poliomyelitis divides

the disease into nonparalytic or abortive forms and paralytic forms. The latter may be broken down into spinal, bulbar, respiratory, and combined types of paralysis. Polioencephalitis and the dromedary type of poliomyelitis should also be included since each of these presents distinguishing features. In addition to these diagnosable forms of poliomyelitis there are many reasons for believing that poliomyelitis occurs during an epidemic in an undiagnosable form in a much larger group of persons. Such subclinical or inapparent forms are usually diagnosed as cases of sore throat or influenza, since signs of central nervous system involvement do not develop and no changes occur in the spinal fluid.

It is convenient to discuss the diagnosis of poliomyelitis under the conventional headings of history, symptomatology, physical findings and laboratory data. A careful history as to the mode of onset and duration and type of symptoms is important from the point of view of differential diagnosis. Unlike many other acute communicable diseases a history of exposure, or lack of it, to a previously known case is not very helpful. A history of another member of the family having been ill with an acute febrile illness some time within the limits of the incubation period may be of some significance, but the total number of cases which can be traced to direct contact with a known case is not very great. The incubation period is estimated to vary from four to seventeen days with an average duration of approximately ten days.

As a rule the onset of the disease is acute, with fever, headache, malaise and perhaps nausea and vomiting, an onset which differs little from that of many other acute infections such as tonsillitis, scarlet fever, influenza, etc. Either diarrhea or constipation may be present. The fever of poliomyelitis is usually of moderate degree averaging from 101 to 103 F. Temperatures above this at the onset of symptoms should make one suspicious that poliomyelitis is not the causative factor. In fact out of 136 cases of poliomyelitis seen at the Raymond Blank Memorial Hospital for Children in the 1946 season there were only 22 cases in which the fever was recorded as being above 103 F. in any stage of the illness. Sore throat both objectively and subjectively is of sufficiently common occurrence in poliomyelitis to deserve special mention. In the 136 cases just referred to it was present either on inspection or as a complaint of the patient or both in 95 instances. During the 1946 season many of us were impressed with the epidemic of sore throats which paralleled the poliomyelitis epidemic. The number of individuals who experienced such acute febrile illnesses was

far greater than the number of poliomyelitis patients. While no proof was available, nevertheless it was difficult to escape the suspicion, at least, that these may have been actual infections with the poliomyelitis virus, but in which nature's defensive mechanism was successful in preventing the virus reaching the central nervous system. It would have been interesting to have had the means at hand to attempt to recover the virus from the throats or stools of some of these patients, or to have determined the presence of neutralizing antibodies from blood specimens at the time of the illness and several weeks later. Diagnosis of poliomyelitis in this possible subclinical or inapparent group cannot be made without the aid of such studies.

If and when the virus reaches the central nervous system, however, diagnosis becomes possible. In the early stages of the disease it cannot be determined whether the patient will have a nonparalytic or abortive type of poliomyelitis, or whether the process will develop on to paralytic involvement. Forty-six of our 136 cases in 1946 were of the nonparalytic variety. The most important and the most constant of the early diagnostic findings is stiffness of the muscles of the neck and back. Attempts to flex the head forward on the chest meet with resistance. If the patient is asked to sit up he accomplishes this by turning to the side, pushing himself up with his arms and maintaining the sitting position by propping himself with his arms extended backward—the so-called "tripod position." Nuchal rigidity and stiffness of the back developing in a patient with a febrile illness as described above, particularly in the poliomyelitis season, justifies a presumptive diagnosis of poliomyelitis. Other confirmatory signs may or may not be present and are likely to be quite variable. Kernig's sign is less constant than is nuchal rigidity. Reflexes are frequently hyperactive in the early stages but may become diminished or absent later on according to the degree of nerve involvement. Pain as a symptom is also quite variable. In the milder nonparalytic or abortive cases pain is usually absent except for some slight discomfort in the neck and back. In the paralytic cases however pain may be quite severe along involved nerve trunks and muscles. For the most part poliomyelitis patients are alert mentally, which is in distinct contrast to the stupor and coma observed in purulent meningitis and tuberculous meningitis.

Confirmation of one's suspicions that a poliomyelitis infection is present even in the nonparalytic or abortive cases or in the preparalytic stage is usually possible by an examination of the spinal fluid. The fluid is clear and may be under slight

or moderately increased pressure. Considerable variation is noted in the total cell count. In 5 of our 136 proved cases of poliomyelitis the count was within normal limits. In 62 it was between 11 and 100, and in 50 it was between 100 and 500. There were 8 cases in which it was over 500, the highest being 1,150. Early in the disease polymorphonuclears may predominate. This was the case in 27 of our patients. Later there is a lymphocytic predominance. The sugar of the spinal fluid is unchanged, but the protein may be slightly increased. Cultures, of course, are sterile.

Nonparalytic or abortive poliomyelitis may at times present a problem in differential diagnosis which is difficult of solution. Lymphocytic choriomeningitis and mumps meningo-encephalitis are the two diseases most easily confused. The spinal fluid findings are similar in all three diseases with the exception that in lymphocytic choriomeningitis the cells are predominantly lymphocytes throughout the course of the disease. Mumps meningo-encephalitis may occur in the absence of swelling of the parotid glands. History of known exposure to a case of mumps in the house or at school may give a helpful lead. A rise in complement fixation titer six weeks later as compared to the acute stage is diagnostic of lymphocytic choriomeningitis, but obviously is not helpful during the acute stage when differentiation is most desired.

Dromedary type poliomyelitis gets its name from the supposed resemblance of its two spikes of fever to the two humps of a camel. As has been pointed out a dromedary has only one hump, but this anatomic discrepancy is of no great importance. Sixteen of our total 1946 cases were classified as being of this type. From one point of view dromedary poliomyelitis may be looked upon as a combination of subclinical or inapparent poliomyelitis and nonparalytic or paralytic poliomyelitis with an afebrile interval of two to four days separating the two forms. In the first phase which lasts two to three days there are the usual findings of fever, headache, and frequently sore throat, but no stiffness of the neck or back is present, nor are there changes in the spinal fluid. It is well for the physician to have this type of poliomyelitis in mind, lest he be too hasty in assuring the family at the end of the first hump that all danger of the disease is past.

Paralyses usually make their appearance by the third or fourth day after the onset of symptoms. Diagnosis of the ordinary spinal type in which there is paralysis of an extremity seldom offers a problem. One condition, however, easily confused with the ascending or Landry type of poliomyelitis deserves special mention. This is neuronitis or the Guillain-Barré syndrome in which there

is a symmetrical ascending flaccid paralysis, symmetrical sensory changes, high spinal fluid protein, but normal cell count. It should also be kept in mind that any painful involvement of a bone, joint or muscle may result in a pseudo-paralysis which requires differentiation from the real paralysis of poliomyelitis. Among such possibilities may be mentioned rheumatic fever, purulent arthritis and osteomyelitis.

Bulbar paralysis is easily overlooked, especially when it is not accompanied by other more obvious paralyses. Inability to swallow, regurgitation of liquids through the nose, and a nasal twang to speech are symptoms highly suspicious of this form of poliomyelitis. Examination of the throat usually reveals palatal paralysis and a pharynx filled with saliva. The blood pressure is likely to be elevated. Jerky, irregular respiration indicates that the respiratory center is involved. Diphtheritic paralysis may give a similar picture, but the history and spinal fluid findings should serve to rule out this condition.

Paralysis of the muscles of respiration and of the diaphragm may or may not present a diagnostic problem. Usually most difficulty is encountered in children too young or too sick to cooperate. Paralysis about the neck and shoulders are a warning to be on the watch for respiratory involvement, as is the ascending or Landry type of paralysis. In contrast to the jerky irregular breathing when the respiratory center in the bulbar cord is involved, the breathing in paralysis of the muscles of respiration is shallow and rapid but perfectly rhythmical. The pulse rate becomes increasingly rapid. Diaphragmatic paralysis can be accurately diagnosed by fluoroscopy or by the x-ray if necessary.

In polioencephalitis stupor and coma are the presenting symptoms. Differentiation from other forms of encephalitis may be very difficult, particularly if the disease occurs out of the usual poliomyelitis season. Post-infectious encephalitis such as that occurring after measles, varicella, or post-vaccinal can usually be distinguished by the history.

In addition to the differential diagnoses which have already been mentioned in connection with the various types of poliomyelitis, there are many other diseases which have a symptomatology simulating poliomyelitis and which may trip one up unless he is alert to the possibility, especially when such conditions occur in the midst of an active poliomyelitis epidemic. Tuberculous meningitis and the purulent meningitides are such possibilities. Two cases of brain abscess have come to the author's attention which were confused with poliomyelitis. Brain tumors may be

so confused. Examination of the eye-grounds may be very helpful in preventing such errors. A case of postinfectious hemorrhagic nephritis with convulsions was diagnosed as poliomyelitis until an examination of the urine revealed gross blood. The encephalitides, lymphocytic choriomeningitis and mumps meningo-encephalitis have been mentioned as has Guillain-Barré's syndrome. It would be difficult to extend the list of diseases which may be confused with poliomyelitis to full coverage, and probably such an attempt is unnecessary. One may conclude that if a detailed history, symptomatology, physical findings, and spinal fluid changes are all carefully evaluated and related to the known pathogenesis of poliomyelitis, the chances of an incorrect diagnosis will be greatly reduced.

THE PRESENT CONCEPT OF TREATMENT OF POLIOMYELITIS

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In discussing the treatment of poliomyelitis it should be clearly understood that as yet no satisfactory treatment of the disease per se has been found. The major portion of the after-treatment of poliomyelitis is that done to salvage what remains of the function of the weak and paralyzed muscles and to train or reconstruct the involved parts to the point where the patient obtains the best possible function from what he has left. Undoubtedly none of the treatments used, for example, supportive, physical or orthopedic, have any effect on the progress of the disease once it has started, nor can treatment change the already existing primary lesions in the central nervous system.

There are no drugs that have any specific effects on the disease, and the use of immune serums has not yet met with any great success. Therefore, when the present trends of the treatment are discussed, the trends in the physiatrie and orthopedic treatment must be presented primarily.

During the past six or seven years there has been much controversy relative to the methods of administering the physical treatment. This has been stimulating and helpful in many respects. The changes in the treatment have appeared radical to some workers. This has been due mainly to claims that have been made and to the publicity put forth. Actually the treatment used by outstanding workers ten to thirty years ago did not basically differ a great deal from that which

is used today. The main difference was the tendency to use longer periods of immobilization, to be less meticulous in the re-education of the involved part and to pay less attention to so-called muscular spasm or tightness and to the resulting muscular imbalance produced by this condition.

Practically the whole Kenny concept of the disease, as it was originally described, has been questioned and refuted. However, some of the terms used in the description of the Kenny concept have come into common use; for example, the term "in-co-ordination" instead of "substitution." Undoubtedly both conditions exist—substitutionary movements being a compensatory factor, although, if used too early, they may promote atrophy of disuse of the muscle for which the movement is substituted. The term "muscle spasm" is now used frequently and has caused considerable confusion. The term "mental alienation" is not used as widely because it has not been explained adequately from the physiologic standpoint.

Whether one agrees with the Kenny concept of the disease or not, credit should be given to it for having stimulated a great deal of investigation on the function of neuromuscular mechanisms involved and on attempts to explain the symptoms of the disease further. Some of the basic experimental and clinical studies which have been made are responsible for the changes in the treatment.

Pathologic Physiology

It is generally recognized that the lesions produced by the poliomyelitis virus are not restricted to the anterior horn cells of the spinal cord. Careful investigators reported their existence in the cerebral cortex, especially the motor and premotor areas, basal ganglia, thalamic and hypothalamic nuclei, midbrain, pons, cerebellum and medulla oblongata. Furthermore, recent evidence indicates that the regions containing the cell bodies of internuncial neurons are the most commonly affected areas of the spinal cord.¹⁻⁵ These lesions of the internuncial neurons are used as a basis for the explanation of the spasms, mental alienation and in-co-ordination which are now considered as common manifestations of the disease.⁶

There are certain cases in which the paralysis is mild and transitory. The paralysis is not complete because so few nerve fibers may be involved that the muscles they supply cannot be considered paralyzed. In the early stages of the disease such muscles, which may seem paralyzed, may undergo complete recovery. However, another important factor is that even though the virus may invade the cells and these cells may even show degeneration they may recover and consequently recovery

of the muscles supplied by them will also occur. This is probably the basis for the cases in which the disease may appear severe in the beginning but, without any treatment or handling, gradual recovery takes place. There is a stage, however, in which the recovery from paralysis is either exceedingly slow or nonexistent until treatment is started. Under treatment the weakened muscles may be trained and may show signs of recovery. This probably results from obtaining good co-ordination and hypertrophy of the remainder of the functioning muscle fibers.

The pathologic change seen in the muscles and in the peripheral nerves cannot be attributed to direct action of the virus. It can be attributed to the secondary changes resulting from the destruction of the anterior horn cells by the virus. A clear understanding of what is known of the pathologic physiology of poliomyelitis is important in the treatment of the disease. Fischer⁷ stated that the contractile elements of the muscle—that is, the muscle fibrils—are the ones that are most severely attacked in the cases of loss of weight and atrophy of muscle as a result of destruction of the peripheral nerves. Hines and Knowlton⁸ found that there was complete disappearance of contractile tissue after atrophy from denervation.

Fibrillations which are recognized as random twitches in the muscles can sometimes be observed clearly through the skin. Denervated muscle is also hypersensitive to acetylcholine; this constitutes the changes in chemical excitability of denervated muscles. Paralyzed muscles atrophy because of interference with the circulation and because of loss of connection with the central nervous system. It is a recognized fact that, once a muscle is completely disconnected from the central nervous system, it is bound to atrophy unless regeneration of its nerve fibers occurs.

The "muscle spasm" or tightness that is often present in poliomyelitis is not due necessarily to a lesion in the muscles themselves. Recent evidence indicates that it is a reflex phenomenon. The work of Bouman and Schwartz⁹ and of Kabat and Knapp¹⁰ indicates that spasm is due to loss of inhibitory influences on muscular contraction from higher centers which are blocked in close proximity to the lower motor neuron. Spinal anesthesia by means of procaine hydrochloride caused relaxation of muscles that were in spasm. This led to the conclusion that spasm of muscles can be definitely considered neurogenic and is due to blocking of reflexes by lesions in the gray matter in the spinal cord. Muscle spasm is definitely influenced by anesthesia.

From a physiologic point of view it is difficult

to accept entirely the explanation of "muscle spasm" or tightness on a reflex basis when the reflex arc may be involved in the disease process. On the other hand, those who do not accept this explanation believe that there are intrinsic factors in the muscles and perhaps fascia involved in the production of tightness which are unexplainable as yet.

Treatment

For the past thirty years the main feature in the treatment of poliomyelitis has been considered to be the re-education and training of weak and paralyzed muscles. This was done by some workers as soon as pain and soreness of the muscles had ceased, by others after longer periods of immobilization. Nearly all workers used some form of heat. Moist heat, radiant heat and warm baths were used through the years. The re-education varied from that used at present mainly in that it was not done as extensively and greater attention was given to prevention of fatigue. If the experimental studies¹¹⁻¹⁵ on denervated muscles are correct, the great emphasis placed on the prevention of muscular fatigue after the acute stage of the disease may not be the important element. The clinical results tend to indicate that prolonged immobilization was not rational. Likewise stretching the muscles in the early stages of the disease apparently is not as dangerous as was believed although strenuous stretching of contracted muscles of old poliomyelitic patients may be dangerous. The use of hydrotherapy in the form of therapeutic pools still remains an important adjunct in the treatment of poliomyelitis when properly supervised.

Certainly it is obvious that in the treatment of acute poliomyelitis the supportive treatment used in any infectious disease is necessary. Emergency procedures must be used to save the patient's life in a certain percentage of cases. Careful observation of the patient for respiratory difficulties is most important. It was recently¹⁶ pointed out that all the deaths occurring in a series of 464 children less than 16 years of age in the epidemic of 1946 were due to bulbar paralysis and that it seemed remarkable that attention heretofore has been primarily focused on morbidity rate rather than mortality rate in poliomyelitis.

It was emphasized that in the care of bulbar poliomyelitis, the crucial problem is the prevention of anoxia, the susceptibility of brain tissue to anoxia being common knowledge. Therefore, severe bulbar poliomyelitis implies encephalitis involving the brain stem and it would seem logical to maintain a continuous supply of oxygen. The treatment administered was based on the correc-

tion or prevention of anoxia due to one of several factors: (1) an impaired central respiratory mechanism with resultant inadequate oxygenation due to periodic or complete apnea; (2) an impaired peripheral respiratory mechanism (paralysis of respiratory musculature); (3) the repeated aspiration of small amounts of mucus with production of numerous small regions of obstructive atelectasis, plugging of large bronchi by mucus or food particles, accumulation of mucus in the oropharynx with consequent mechanical obstruction, paralysis of the vocal cords with obstruction of airways or reflex closure of the glottis; (4) pulmonary edema with consequent decrease of alveolar absorptive surface. Combating these factors was the basis for these workers using aspiration, administering oxygen, performing tracheotomy and using the respirator.

Tracheotomy was performed twenty times in the series of 107 cases in which there were bulbar symptoms. The indications for tracheotomy were based on the signs and symptoms indicating the presence of eminent possibility of anoxia; for example, irregular shallow or periodically apneic respiration or both; exhaustion, agitation, restlessness, or apprehension; progression of bulbar involvement with increasing dysphagia and the presence of suffusion and cyanosis. In general all patients who had bulbar poliomyelitis were given oxygen prophylactically. It was concluded that there can be little doubt as to the effectiveness of tracheotomy in certain cases of bulbar paralysis; that is, in those not characterized clinically by fulminating progression. It was implied, of course, that no treatment is effective in cases of fulminating bulbar poliomyelitis.

Opinions differ as to when the respirator should be used in cases of respiratory involvement in poliomyelitis. Wilson¹⁷ expressed the belief that the use of the respirator in bulbar poliomyelitis may be contraindicated. However, he pointed out that the respirator should be used early in cases of failure of the respiratory musculature. The patient should be carefully watched and the respirator should be used before the symptoms of a serious lack of oxygen become obvious. This is logical, not only because the anoxia will produce damage to nerve cells but because the overexertion of the weakened respiratory muscles increases fatigue and at this stage of the disease may increase paralysis.¹⁸ It would appear that too frequently the respirator is not used sufficiently early, because it is considered a major procedure and is used only as a last resort.

The general medical care of a large percentage of patients who have acute poliomyelitis consists of general supportive treatment with use of seda-

tives and analgesics for pain if necessary. The more specific procedures consist of physical supportive measures to maintain good bodily alignment and to prevent the formation of deformities and the use of moist heat, mainly hot packs and mild passive exercise.

Measures should be taken in cases in which paralysis is present to provide proper support of the extremities and to maintain correct bodily alignment. The use of a board under the mattress to maintain correct bodily alignment, a footboard to prevent drop foot and to prevent bed clothes from pushing the foot down, rolled towels, sand bags, pillow supports and at times the use of wire and plaster splints to keep the extremities in proper position are important. The position of the patient may be changed at frequent intervals during the twenty-four hours of the day. However, care should be taken that malposition is not maintained or frequently repeated for any length of time. The greatest difficulty encountered relative to improper alignment occurs in young children, who are more active than older patients and do not understand what is being done. They may lie in poor position or stand on the soft mattress on weak and paralyzed extremities; repetition of such positions may produce deformities. It is obvious that good nursing care, close observation, careful restriction of movement and use of some form of splinting by means of the simple supports mentioned previously are essential. Rigid supports may be used but it must be emphasized that "rigid supports are a poor compromise for good care."

There seems to be a general consensus that the use of hot packs does relieve the pain and discomfort of acute poliomyelitis.

The mechanism by which frequently applied hot packs produce muscular relaxation and relieve pain in poliomyelitis is not specifically known. However, heat, per se, has a sedative effect and can produce muscular relaxation and relieve pain. Whether the moist heat of the hot pack has any specific effect over other forms of heat is not known nor is it known whether simpler and more easily applied forms of heat if used with the same frequency and duration as the hot packs may be as helpful. Infra-red radiation has been used and considered effective.¹⁹ Hot baths at a temperature of 104 F. administered after the contagious period of the disease, three or four times daily for fifteen to twenty minutes, were considered²⁰ more effective than hot packs in the relief of pain and stiffness. The baths were considered simpler because a pool was used and several patients could be treated at the same time.

The method of applying the packs has changed.

The meticulous procedure of applying hot packs to the various segments of the body is not as widely used as previously. In the past several years the so-called prone packs have been used. In this procedure the woolen cloths rung out of boiling water are merely dropped on the area and an insulating material is wrapped or tucked around them. In treating small children the older type of pack carefully wrapped on the part still is necessary. During the acute phase of the disease most workers apply the packs for periods of six to twelve hours daily and change them every fifteen minutes to two hours depending on the severity of the pain and tightness. The frequency with which the packs are changed and the time they are applied each day should depend somewhat on the condition of the patient. If the pain, tenderness and muscle tightness are not severe it may not be necessary to treat as vigorously. Obviously if the patient is in serious condition resulting from respiratory involvement hot packs should be used with caution. However, in the case of the patient in the respirator, packs should be used with caution but may be used to advantage in certain instances to prevent stiffness, although the procedure is difficult under such conditions.

The total length of time during which the packs may be used seems to vary. This depends on the center, the procedure used and the concept of what is to be accomplished. A few years ago it was considered essential to use packs for weeks and months in order to obtain relaxation of tightness. There has been a trend away from this concept and toward the belief that other factors are as important as, if not more important than, hot packs in release and prevention of residual muscular "spasm."

Whereas hot packs are still applied over long periods, it has been found that where available warm baths²⁰ used in conjunction with mild passive stretching exercise are as effective as hot packs if not more so. This is especially true after the acute stage of the disease has passed. However, in the majority of cases of poliomyelitis, if proper treatment is given—for example, using hot packs or warm baths or both, and carefully done passive exercise—the pain, tenderness, and muscular tightness usually disappear in two to eight weeks. It should be emphasized that in many instances heat alone will not eradicate muscular tightness.

It has been fairly well established that passive stretching exercise, preferably done following whatever thermotherapy is given, is very important. Whereas stretching of tight muscles was not generally considered part of the treatment in

the early stages of the disease a few years ago, it is now used in varying degrees by nearly all workers. Passive stretching exercise must be done carefully, but it can be used from the early stage of the disease. As the pain subsides it can be continued until the muscle tends to remain supple and full length. After the painful stage of the disease has passed, careful stretching of the muscles apparently can be done rather strenuously without danger of injury.

Since so much emphasis has been placed on muscular tightness and spasm, several drugs have been used in an attempt to produce rapid relaxation. The two most widely studied drugs were prostigmine and curare. The use of prostigmine and hot packs is still being studied. Such treatment has not yet proved to be very effective.

Crystalline d-tubocurarine chloride has been used recently²¹ with considerable enthusiasm. When administered intramuscularly in oil in small doses and in conjunction with passive stretching exercise curare was considered to be spectacular in its effect in relief of spasm and other symptoms of the disease. However, in a small series of cases the use of curare alone, intramuscularly, intravenously or intravenously in combination with pentothal sodium anesthesia and with passive stretching exercises, did not appear to be of any more value than the use of hot packs or some other form of heat and stretching exercises.²² Fox²³ used it in a series of cases and concluded that it may be of temporary benefit in some instances but that its use in the acute phase of the disease cannot be recommended. It must be remembered that curare is a potent and dangerous drug and must be used with caution.

Treatment after the acute stage, in addition to attempting to relieve pain and muscular tightness, should have as its aim the establishment of co-ordinated muscular function. This is undoubtedly one of the most important phases of the treatment. It is in this phase of the treatment and in that of relief of muscular tightness that the greatest strides have been made, not because of any great discoveries in bodily mechanics or functional anatomy but because of the great stress laid on the necessity for co-ordinated muscular action and its role in efficient muscular activity. The results obtained from this stage of the treatment are largely dependent on the success and thoroughness with which pain and soreness have been relieved and full mobility of the involved parts has been gained. Patients can learn to do well when they are well co-ordinated even though they may have little actual muscular power.

There is evidence to indicate that in poliomyelitis and other conditions in which there is partial

or complete disruption of the peripheral nerves, the in-co-ordination is due to disordered reciprocal innervation.

In a study of muscular dysfunction in poliomyelitis Watkins and associates²⁴⁻²⁶ reported that when patients had considerable weakness or painful motion marked disruption of normal innervation during movement was observed. By use of electromyographic recordings they found that the muscles with antagonistic functions were simultaneously activated. This abnormality was decreased by muscle re-education and relief of pain. However, a more severe disorder of innervation produced actual synchrony of individual action potentials in opposing muscles. Muscle re-education could not overcome this disorder.

These workers also found the same conditions present when lesions other than poliomyelitis produced weakness and paralysis. It was their opinion that the various factors relative to muscular irritability, in-co-ordination and contractures were not specific for poliomyelitis. They demonstrated not only simultaneous activation of the agonist and the antagonist, but also intermittent synchrony of individual discharges from opposing muscles such as is found in peripheral nerve lesions. The studies mentioned previously indicate that these actions are not entirely volitional.

In addition to actual disturbance of the reciprocal innervation there are other factors involved in disruption of patterns of motion. An action performed by muscle groups is represented in the brain as a motion and not the specific muscle which produces it. Therefore, when the nerves supplying a muscle or a group of muscles are wholly or partially disrupted the brain still attempts to produce motion by sending impulses to the region along the intact nerves. If motion similar to that produced by the weakened or paralyzed muscle is accomplished readily by the neighboring groups of muscles, even though the muscles producing it are remote or opposing the weak or paralyzed ones, the patient continues to practice that motion. If he is unsupervised, undesirable patterns of motion may be produced which may be difficult to overcome. Such actions are commonly exemplified by the contraction of the hamstring muscles to produce extension of the knee in cases of paralyzed quadriceps or by the overdevelopment of the toe extensors in the case of weakness or loss of action of the anterior tibial muscles.

It is common to see the action of a weak anterior tibial muscle disappear entirely in the presence of overaction of other stronger muscles of the area. The weakened gastrocnemius in the presence of strongly functioning peroneals, pos-

terior tibial or toe flexors may completely disappear or may become further depressed when the patient is allowed to assume weight-bearing activities. Such results are partially the basis for the belief that fatigue is responsible for the disappearance of function of weak muscles. The actual explanation is probably on the basis of fatigue only in the sense that the weak muscle does tire quickly and ceases to function temporarily. If the patient continues to be active, the stronger muscles are used to produce the motion although inadequately. The weak muscles become suppressed and finally cease to act and a new pattern of motion is developed. This phenomenon may be fairly extensive in an individual case and is seen in neurologic conditions other than poliomyelitis. Therefore, the formation of such new patterns of motion and not fatigue is probably the basis for the increased loss of function.

It is believed that, if the functioning muscles in poliomyelitis can be kept in normal length and if the in-co-ordinated and substitutionary movements are not established, deformities can be prevented. Bennett²⁷ expressed the belief that it is lack of co-ordinated movement rather than paralysis which produces deformities. However, it is not only difficult but may be physiologically impossible, after much delay, to prevent strong synergistic muscles from taking over the function of the weaker ones.

Time does not allow a discussion of the procedures used to train patients in co-ordinated movement. It is done largely by stimulation of the proprioceptors in various muscles through careful passive motions. This is done frequently and the muscles are pointed out to the patient. These passive motions and carefully guided and active motions assist in establishing the co-ordinated patterns of movement. The patient's activities are carefully guarded in order that he may not develop undesirable patterns of movement which may readily occur if he is allowed to assume activities too strenuous for the stage of recovery.

Training of patients in co-ordinated movement, in such a manner that all groups of muscles function to the best advantage and the weakened muscles are used and developed properly, requires specialized skill on the part of the physical therapist and careful observation and judgment on the part of the attending physician. It may require weeks and months and it may be difficult to decide whether maximal benefits have been reached.

Another phase of the treatment is that of attempting to increase the strength of muscles. This has always constituted an important phase of the after-treatment of poliomyelitis. The methods used in strengthening the weakened muscles

do not differ greatly from those which have been used for many years. However, more emphasis has been placed on this training and more care is taken in doing it; also it is done for a longer period. This is done first by using careful passive tugging of the weakened and paralyzed muscles to establish the proprioceptive sense. Then active exercise of the individual muscle or groups of muscles is used as voluntary control returns. The amount of exercise depends on the power of the muscle. It is increased as muscular power is increased; that is, from movements with assistance to those with gravity eliminated and then to movements against gravity and resistance. Careful attention must be given at all times to see that the motion is co-ordinated. As muscular power increases in-co-ordinated motions may develop. Since muscles do not recover at the same rate, it can be readily seen that the so-called in-co-ordinated motions can be developed at any stage in the over-all recovery of the various groups of muscles.

As muscular strength returns and co-ordinated movement is established, the activities of the patient are increased. The stage when general activity of the patient is increased seems to vary considerably with the different medical centers. Some workers do not allow the severely involved patient to sit or stand or become increasingly more active for long periods. Others believe that as soon as the soreness and pain disappear the activity of the patient can be increased to the maximum of his ability. The trend is away from long periods of curtailment and toward early activity within the limits during which co-ordinated motion can be done. Early activity is important in the development of the musculature. The activities of patients are often curtailed on the basis that fatigue will produce further weakness. However, the danger of development of undesirable patterns of motion, through lack of co-ordination produced by too strenuous exercise, is probably of greater importance than the factor involved in fatigue.

Keys²⁸ stated that exercise which produces no fatigue has little benefit and there is little reason to support the view that active exercise is harmful in most diseases. Rhythmical contraction²⁹ led to increase of work capacity of muscles and increased glycogen and creatine content. Training of muscles increased the concentration of catalase, augmented aerobic and anaerobic glycolysis and improved the conditions for synthetic processes.

When activity is increased, care should be taken to use supports of various kinds to hold weakened and paralyzed parts in positions which will not

encourage substitutionary movement and which will enhance the development of co-ordinated action. Appliances which will allow activity without danger of producing deformity and poor muscular control should be used early. There is a belief that appliances, such as braces, corsets, and splints, are not necessary or that they hinder ultimate recovery. It appears illogical to curtail the activity of a patient for long periods when appliances may allow him to become active without danger of producing deformities or muscular imbalance. Likewise it should not be assumed that if a patient can accomplish certain activities, for example, walking without braces when both legs are paralyzed, deformities may not develop in later years. Furthermore, in such instances instability may curtail his activities to such an extent that the inconvenience of wearing braces may be overshadowed.

In training the patient who has extensive poliomyelitis it is necessary to bear in mind that in addition to trying to increase muscular strength and produce the best possible function of the remaining muscles, the patient must be physically rehabilitated to the greatest possible degree.

If, after a reasonable period, severe paralysis and weakness persist and recovery seems to have ceased, efforts should be directed toward the development of the remaining muscles and the use of various permanent supports. More time should be spent in teaching the patient to handle himself with what he has than in continuing to re-educate muscles which show no signs of recovery.

The patient is taught to walk, get in and out of chairs, step up onto and down from curbs, climb stairs and develop endurance to such an extent that he may have independent locomotion for a considerable time without rest. In most instances it is not necessary to wait months before this stage of the treatment is started; it should be started as needed from the time the patient becomes active. Frequently patients are given extensive treatment in the form of hot packs, re-education and training, and then allowed to return home, having had little or no training relative to handling themselves independently. Frequently little or no guidance is given to the patient relative to his future life. This is left to the family or to social agencies. These patients must be treated as a whole the same as any severely handicapped patient and the treatment can be considered a partial failure if this is not done. Families in most instances cannot adequately finish the rehabilitation of the patient.

The final stages of treatment consist of the use of permanent orthopedic appliances and surgi-

cal procedures for the purpose of correcting deformities and producing stabilization. The stage of recovery in which these may be indicated is probably reached earlier with the present treatment than formerly. It is evident that the treatment of poliomyelitis is still in the stage of inadequacy. However, it is apparent that the disabilities and deformities caused by the disease are not quite as severe as they were formerly.

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ACUTE POLIOMYELITIS

A Study of the Patients Seen at the
Raymond Blank Memorial Hospital
During 1946

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With the beginning of summer, it is well to have acute poliomyelitis in mind. According to the epidemiologic pattern of the disease, Iowa should not have as many cases this year as last. In 1946 Iowa suffered its second worst poliomyelitis epidemic in its medical history. There was a total of 620 cases reported for the entire state. The highest number occurred in 1940 when 929 cases of the disease occurred. A total of 136 of these patients was cared for at the Raymond Blank Memorial Hospital for Children in 1946. Since the age limit for patients at this hospital is 16 years, no data is available concerning patients in the older age group. Because of the imminence of another poliomyelitis season and because it was felt it might be of some interest, an analysis of the 136 patients cared for at the Blank Hospital in 1946 is presented.

The seasonal incidence of admission of poliomyelitis patients to the hospital, enumerated by months, is shown in Chart 1. The first patient was

CHART 1

Date	Number of cases
May	1
June	8
July	21
August	38
September	38
October	19
November	8
December	3
TOTAL	136

admitted in May and the largest number of admissions occurred during August and September, tapering off through November when 9 new cases were admitted. There were only 3 new cases in December. It can be seen that the incidence of poliomyelitis in 1946 began early and lasted late. Age incidence is shown in Chart 2. The youngest patient was 9 months. In this series the

CHART 2

Age in years	Number of cases
0-3	36
4-7	55
8-11	29
12-15	16
TOTAL	136

greatest number occurred between the ages of 4 and 7 years, once again pointing out the fact that poliomyelitis is essentially a disease of early childhood.

Diagnosis was made by history, physical and laboratory examination. Whenever possible, diagnosis was confirmed in the laboratory by exami-

nation of the cerebrospinal fluid. This was possible in all but sixteen cases. In seven of these a lumbar puncture with characteristic findings was done prior to admission. Three of the patients were admitted too long after the onset of symptoms for a lumbar puncture to be of diagnostic value, but these showed a sufficiently marked segmental type of paralysis of recent onset to leave no doubt as to the diagnosis.

Charts 3 and 4 will enumerate the findings of the spinal fluid.

CHART 3		
Cerebrospinal fluid cell count per cm.	Number of cases	Percentage Incidence
0-10	16	11.8%
10-100	66	48.5%
100-200	35	25.7%
200-300	7	5.0%
300-400	4	3.0%
over 400	8	6.0%

CHART 4				
Rating	Mg. % of Protein	Mg. % of Sugar	Mg. % of Chloride	Cell count per cm.
Highest	.75	92	726	1150
Lowest	5	5	429	11
Average	35.8	48.4	670	137.6

No correlation could be found between the number of cells in the spinal fluid and the severity of the disease or the extent of the paralysis.

Other than headache, fever and general malaise, there was nothing characteristic in the history. It was found that 12 patients, or 9 per cent of the total, exhibited a typical dromedary type of poliomyelitis. These patients gave a history of one or two days of headache, fever and malaise, followed by two or three days of normal temperature and well-being only to have the fever and symptoms recur at about the fifth or sixth day, at which time the spinal fluid became diagnostic.

Of the physical findings, fever, sore throat and stiff neck were found to be the most constant findings. One hundred and twenty-one patients, or 89 per cent of the total, showed a stiff neck. It is interesting to note that at the same time of the poliomyelitis epidemic, there was an extensive epidemic of sore throat among the children in this area. The sore throat ranged from a moderate inflammation of the tonsils and pharynx to a rather severe inflammation with exudate present on the tonsils. Of the poliomyelitis patients admitted, 88, or 66.6 per cent of the total, showed an inflamed throat on physical examination. These throats were identical in appearance with the other cases of inflamed throat without poliomyelitis.

While it is not the purpose of this paper to discuss the epidemiology of poliomyelitis, yet it is an interesting observation of the patients seen in this area. The cases of simple sore throat could be compared with measles patients without the

complication of the virus entering the central nervous system. The cases of active poliomyelitis could be compared with measles patients in which the virus had entered the central nervous system to produce a meningo-encephalitis. Perhaps if virus studies could have been made of these throats, the virus of poliomyelitis might have been isolated. Certainly it is well to keep this in mind so that in the future virus studies may be done when the procedure becomes more practical.

Chart 5 gives a review of the temperature records of the patients admitted with poliomyelitis. The majority of patients had a low grade or mod-

CHART 5		Number of patients
Temperature		
Normal to 99.8	.....	2
100 to 100.8	.....	25
101 to 101.8	.....	27
102 to 102.8	.....	47
103 to 103.8	.....	21
104 to 104.8	.....	10
105 to 105.8	.....	3
106 to 106.8	.....	1

erate fever. Duration varied from one to twenty-five days. The average total duration was seven and six-tenths days or approximately one week.

Inquiry was made in each acute case concerning the duration of the symptoms before admission to the hospital. These are indicated in Chart 6 according to the type of involvement.

CHART 6		Average duration of illness before admission
Form of disease		
Non-paralytic	.....	2.8 days
Spinal	.....	3.9 days
Ascending spinal (Landry's)	.....	4.3 days
Bulbar	.....	4.1 days
Encephalitic	.....	5.0 days

Chart 7 shows the classification of all the cases into five main groups.

CHART 7		
Form of disease	Number of cases	Per cent of total
Non-paralytic	46	33%
Spinal	69	51%
Ascending spinal (Landry's)	8	6%
Bulbar	9	7%
Encephalitic	4	3%

1. *Nonparalytic type*.—This group showed no evidence of paralysis or muscle weakness at any time. They all showed stiffness of the neck and back and all had diagnostic spinal fluid determinations. There were 46 cases of this type, constituting 33 per cent of the total cases.

2. *Spinal type*.—This group showed a definite spinal involvement as manifested by weakness or paralysis of muscle groups, enervated by the spinal cord. There were 69 cases of this type constituting 51 per cent of the total cases.

3. *Ascending spinal type (Landry's)*.—In this group, there was a paralysis of the muscles of

it to collect in the nasopharynx which mechanically blocks the air passages. The iron lung is obviously contraindicated in these cases unless tracheotomy is done, since the forced inspirations created by the respirator cause aspiration of these secretions into the lungs, either drowning the patient or causing aspiration pneumonia. Treatment consists of postural drainage and frequent aspiration of the accumulated secretions by suction. However, as was done by the Minnesota group in 1946, if a collar about the lung can be so arranged as to permit a tracheotomy, it is possible that artificial respiration can be carried on until subsidence of the inflammation in the mid-brain permits the respiratory center to resume its function.

In the spinal type of poliomyelitis, respiratory difficulty may arise due to involvement of the motor cells supplying the muscles of inspiration. The respirations here are rapid, shallow, and perfectly rhythmical. This is exactly the opposite of the patient with involvement of the respiratory center. If the air hunger continues to increase, the patient is placed in a respirator while still fully conscious and able to breathe synchronously with the respirator.

The second cause of respiratory difficulty occurring in the spinal type is due to persistent "spasm" of the muscles of expiration so that the thoracic cage is held in a state of expiration. The muscles of expiration include the intercostal muscles, abdominal muscles and the long muscles of the back which are attached to the ribs. The muscles of inspiration may rapidly tire from contracting against these muscles, and hot packs may give some relief. If the patient is not improved, the respirator is used and the packs continued.

Other emergencies existing in the acute febrile stage are paralysis of the bowel and bladder. In our series we had seven patients, 5.3 per cent of the total, with bowel and bladder involvement. Prostigmine was found to be efficacious in relieving the bowel difficulty, but repeated catheterizations were necessary when the bladder was involved.

After the acute febrile period is passed, the patient is still far from cured and the problem of after-care begins. In most cases the relief of pain and tightness of the muscle groups actually begins during the acute febrile period during which hot packs and passive motion are used whenever possible. This form of therapy is continued for as long after the febrile period as is necessary. Supports are used to prevent deformities due to faulty posture. The usual supports are board under the mattress, foot boards, and properly placed pillows.

After pain and tightness have disappeared, the treatment is then directed toward muscle re-education and muscle coordination. As the muscle function returns at different periods even when the same spinal segment is involved, it is highly important that attempts be made to coordinate muscle function so that faulty habit patterns of posture will not develop as the result of over-use of the stronger and more easily used muscle groups. The physiotherapist is a most important individual in this phase of the treatment.

The increase in muscle strength comes by carefully graduating the activity of the patient. Increased activity gradually increases the strength of the muscles. As long as proper coordination is carried out, deformities resulting from faulty alignment do not occur unless the activity attempted is beyond the power of the muscles brought into action. If this occurs, the patient is either restrained from this activity or adequate support is given so that the activity can be carried out with as nearly proper coordination as possible.

Eventually an evaluation is made of the functional capacity to determine what the patient can do safely and practically so that he can take his place in a normal environment. If his functional capacity is sufficient to allow him to lead a normal and effective life, nothing more is done. On the other hand, if his functional capacity is limited, he is a candidate for orthopedic surgery, or orthopedic appliances, or muscle substitution in order to carry out as nearly normal coordination and movement as possible.

Summary and Conclusion

1. An analysis was made of 136 cases of acute anterior poliomyelitis that were admitted for treatment to the Blank Memorial Hospital for Children, Des Moines, Iowa, during 1946.

2. The greatest number of cases was admitted during later summer and early fall although cases were admitted as early as May and as late as December.

3. The ages of patients ranged from nine months to sixteen years. The majority of patients were under eight years of age.

4. A summary was made of pertinent laboratory data, and no correlation was found between the severity of the disease and the spinal fluid findings.

5. A review of the temperature records was made and it was found that the majority of patients ran a low grade or moderate fever with an average duration of seven and six-tenths days.

6. An analysis of the duration of symptoms before admission was made. The average was three and seven-tenths days. The average of the

nonparalytic forms was found to be far less than the other forms of the disease.

7. All cases were classified as nonparalytic, spinal, ascending spinal or Landry's type, bulbar and encephalitic. Figures and percentages of each group were shown.

8. An enumeration of hospital days spent by the total patients was made and it was found that 67.5 per cent of the patients were hospitalized twenty-eight days or less.

9. A summary of the treatment in its various phases was given.

10. An analysis was made of the extent of recovery of all cases. Thirty-three per cent were nonparalytic and consequently had no residual paralysis. Of the paralytic patients, 37 per cent recovered without paralysis; 36 per cent had mild residual paralysis and are likely to show some improvement; 14 per cent had paralysis of one limb that will probably require braces or future surgery; 13 per cent had a severe paralysis involving more than one limb; and 3 per cent of the total group died.

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SOME INDUSTRIAL HEALTH HAZARDS AND THEIR CONTROL

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The enactment of an Occupational Disease Compensation law during the last meeting of the legislature has focused attention on the industrial health hazards in Iowa. The field is not entirely new, but has been given serious consideration for some years.

Industrial management is interested in the control of industrial health hazards since absences

due to occupational diseases represent preventable lost time.¹ A representative of a large eastern industry² has stated that "Factories are means of production and the economic factors of the manufacturing projects are the only reasons for their existence. The over-all economic factors must be the ruling factors in their design. This statement may seem harsh, but it works out best that way in the long run. Men cannot work at their best where working conditions are not good. A high labor turnover is a very expensive luxury. If we find that production costs will be lower for one arrangement, it means that men can work more satisfactorily with that arrangement—or the cost will go up."

Along with other phases of industry, the progress of the synthetic chemistry field in recent years has resulted in the production, distribution, and industrial use of a wide variety of new compounds and materials. The potential hazards arising from occupational exposure to these materials has become of great importance in the program of industrial sanitation. So widespread is the adoption of these compounds and so thorough is the development of modern industrial practice that no industry today can be considered as entirely free of potential health hazards.

Iowa is known far and wide as one of the leading agricultural areas in our country and, therefore, in the world. The extent of the agricultural accomplishments sometimes masks the fact that Iowa also has considerable industrial activity.

In a statewide survey conducted during the period of 1937-1938,³ the Division of Industrial Hygiene found that approximately 20 per cent of the gainfully employed persons in the state were engaged in the mining, manufacturing, and mechanical industries. The survey also revealed that almost all types of industries were represented, although most of the plants were small by accepted standards. Furthermore, the survey showed that the industrial activities and potential industrial health hazards closely paralleled those of other states. In the light of wartime experience, it does not seem unreasonable to assume that there will be appreciable expansion of industrial activity in the state in the next few years.

In discussing industrial health hazards and their control, it is fitting that we consider the definition of occupational diseases, the industrial health hazards responsible for them, the means of evaluating the potential hazards, the measures available for controlling these hazards, and the degree of success afforded by these measures. Space does not allow the presentation of detailed considera-

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tion of all of these elements, and the discussion will be confined largely to general statements.

Occupational Diseases

The Iowa Occupational Disease Compensation law, enacted during the last meeting of the legislature,⁴ defines occupational diseases as those which (1) arise out of and in the course of the occupation; (2) have a direct casual connection with the occupation; (3) have followed naturally from injurious exposure in the occupation; (4) are incidental to the character of the occupation; and (5) are not independent of the employment. Under this law, only those specifically listed will be considered as compensable occupational diseases. Furthermore, no employer shall be liable for any compensation for an occupational disease unless the disease is due to the nature of the employment in which the hazards actually exist, are characteristic of and peculiar to the occupation, and the disease actually arises out of the employment.

Unlike industrial accidents such as cuts, bruises, fractures, etc., the effects of occupationally acquired diseases are much more subtle in their action and ultimate injury. In fact, it is only in the rarer cases, with the exception of the dermatoses, that the action of occupational poisons is acute and results in immediate and obvious manifestations of injury. In such instances, the element of exposure is usually readily discernible and steps can be taken to guard against a similar occurrence. In these cases, the magnitude of the exposure usually gives ample warning of the danger.

In contrast to the acute poisonings, there are more or less unapparent and relatively hidden exposures, the effects of which are generally chronic in action over a considerable period of time and which may take their drain on health and life during a span of months or years until the accumulated damage is oftentimes irreparable. It is in this class that the occupational diseases fall.

Portal of Entry:—One of the first items in the consideration of occupational disease hazards pertains to the mode or means of entrance of the causative agents into the organism of the worker. The portal of entry may be through: (1) the respiratory system by inhalation; (2) the digestive system by ingestion; or (3) the skin by absorption or penetration. Of first importance from the standpoint of incidence is the mechanism of skin irritation, absorption, or penetration. On the other hand, the mechanism of inhalation—since the materials are more directly introduced into the tissues by this means—ranks first from

the standpoint of severity of symptoms. The scope of the present discussion will be limited to those atmospheric contaminants producing systemic effects, and the various aspects of the dermatoses will be covered in a later discussion.

Factors Essential for Harmful Exposure:—Several essential factors must be present before an exposure may be considered potentially harmful,⁵ and include:

1. Form. The material must be in a toxic form; for example, silicon must be present as silicon dioxide.

2. Physical state or particle size. This factor must be judged from the standpoint of lung invasion. The material must be in gaseous or vapor form, or dust particles must be equal to or less than 5 microns in diameter in order to gain entrance to the lung passages.

3. Concentration. This factor is important from the standpoint of comparison with the known tolerable limit.

4. Exposure. This factor depends upon the combination of time and degree of exposure, and is explained by the statement that smaller amounts can be tolerated for longer terms.

5. Individual susceptibility. The complicating factor of susceptibility is the great variable and is difficult to predict.

Industrial Health Hazards

The occupational disease hazards may be grouped in three classes in accordance with the nature of the causative agent, such as chemical, physical, and biologic.¹ These agents also may be classified into two broad general groups by combining the chemical and biologic agents into the harmful substances, and placing the physical agents under the harmful conditions.

Harmful Substances:—The harmful substances are classified in general in accordance with the physical state in which the substance occurs,⁶ as follows:

1. Dusts. Solid particles produced by the disintegration of organic or inorganic materials; reduced to a size small enough to be inhaled, swallowed, or absorbed.

2. Fumes. Solid particles produced by chemical action on, combustion of, or sublimation of matter such that it is held in suspension in the air.

3. Gases. Substances existing as aeriform fluids at normal temperatures.

4. Mists. Suspended liquid droplets generated by breaking up a liquid into a dispersed state or by condensation of the gaseous to the liquid state.

5. Vapors. Gaseous forms of substances normally liquid or solid at ordinary temperatures.

6. Infectious materials. Pathogenic organisms that may be contaminating, or inherent with, the material handled.

Harmful Conditions:—The harmful conditions include the environmental factors producing physical effects on the body,¹ and are listed as follows:

1. Air pressure. Extreme air pressures, as in caisson work, or extreme variations in pressure.

2. Confined positions. Work positions so confined as to affect the functioning of the muscles.

3. Humidity. Extremes or extreme variations in humidity.

4. Light. Lighting conditions causing eye strain or other damage, such as nystagmus.

5. Noise. Noise of sufficient intensity and duration as to affect the hearing.

6. Pressure. Working conditions causing repeated pressure on joints sufficient to cause damage.

7. Temperature. Extremes or extreme variations in temperature.

8. Vibration. Reciprocating or vibrating work motions causing muscle damage.

Physiologic Action:—The harmful substances may further be classified with relation to the physiologic action produced from sufficient exposure.⁷ The groups listed under these considerations are shown as follows:

1. Protoplasmic poisons. These materials include the heavy metals and are inherently poisonous to all living matter.

2. Dusts. Dusts may be reclassified into three subgroups in accordance with the results of prolonged inhalation,⁸ as follows:

a. *Proliferative* dusts cause growths which displace the air sacs in the affected lung areas, with free silica and asbestos as the chief examples.

b. *Inert* dusts remain unchanged in, and with no action on, the lungs, and are represented by carbon and carborundum.

c. *Absorptive* dusts are absorbed into the body and disappear from the lungs, with calcite as the chief example.

3. Asphyxiants. The asphyxiants may be of two types depending upon the type of action and are classed as follows:

a. *Simple* asphyxiants which cause suffocation only when they are present in sufficient amounts to reduce the oxygen content of the air to a point below that necessary to support life, with methane as the chief example.

b. *Chemical or internal* asphyxiants which produce harmful effects by interfering with the interchange of oxygen from the blood to tissues. There are two general types of the chemical or internal asphyxiants;

(1) Those that react with the blood in such a

way that it cannot carry oxygen to the tissues, with carbon monoxide as the chief example, and

(2) Those that react with the tissues in such a manner that they cannot absorb oxygen from the blood, with hydrogen cyanide as the chief example.

4. Irritants. Irritants are essentially corrosive agents acting on the membranes of the breathing passages. The site of the action of irritants varies with the degree of their solubility in water, those with the greatest solubility acting upon the upper structures. The irritants may be classified as follows:

a. Those affecting mainly the upper respiratory tract, with ammonia and hydrochloric acid as examples.

b. Those affecting the upper respiratory tract and also the deeper structures such as the bronchi, represented by chlorine and sulfur dioxide.

c. Those acting primarily upon the lungs and, to a much less extent, upon the upper respiratory tract, with ozone and the nitrogen dioxides (nitrous fumes) as examples.

d. Organic vapors that do not follow the general rule as to the locus of action, and are represented by acrolein and dimethyl sulfate.

e. Substances whose irritant action is secondary to the systemic effects from absorption, with hydrogen sulfide as the chief example.

5. Anesthetics. Anesthetics are of four general types depending upon the site of the action, as shown by the following:

a. Those with no serious after effects. Substances in this group are widely used as surgical anesthetics.

b. Those acting on the visceral organs. These materials produce degenerative changes in the heart, liver, and kidneys, and are represented by the halogenated hydrocarbons.

c. Those altering the blood system. Substances in this class may alter the blood-forming mechanism, decrease the red blood cells, decrease the white blood cells, or alter the agents causing clotting. The coal tar solvents are the chief examples of this type.

d. Those altering the central nervous system. These substances exert their effect upon the nerve structures such that their normal function is impaired, and are represented by the petroleum solvents.

6. Organic nitrogen compounds. These materials cause impairment in the blood and circulation systems, with aniline and amyl nitrite as examples of this type, respectively.

7. Organo-metallic substances. These materials do not conform to the other groups but combine protoplasmic poisoning and irritant action. Some

of the most effective chemical combat agents belong to this group.

Threshold values

It is not to be construed by the above remarks that the materials listed among the harmful substances are to be avoided in industrial activities. It is generally conceded by workers in the field of Industrial Hygiene that no material should be discriminated against because of its toxic properties. Fortunately, the average human system can safely tolerate certain amounts of all these materials.⁹ Acting on this premise, medical investigations have determined threshold values or toxic limits from most of these materials, at least those most commonly used. These threshold values have been determined by laboratory studies, and by correlation of physical findings and history of exposures. They have been set up as the maximum safe concentrations in which the average man can work continuously, day after day, without developing symptoms of physical impairment. These values serve as a basis for evaluating the potential hazards and for measuring the efficiency of control measures.

Threshold values may be represented by different units, depending upon the physical nature of the material. For instance, concentrations of gases or vapors are expressed in parts of gas or vapor per million parts of air by volume. Concentrations of mists and of metallic dusts and fumes are expressed as milligrams of material per cubic meter of air, and sometimes as milligrams per 10 cubic meters of air. Ten cubic meters of air represent the amount of air breathed in one working day by the average person doing moderate work. The concentrations of mineral dusts are usually expressed as million particles per cubic foot of air.

Evaluation of Hazards

When industrial operations are found to be accompanied by potential health hazards, particularly if they are of a chemical nature, it is necessary to evaluate the hazards by chemical analysis. Much of the analytical chemistry of the industrial hazards deals with the estimation of concentrations of substances in air. It also may be necessary, however, to determine the composition of parent compounds, or to analyze body fluids or products of the body.

The problem of detecting and estimating poisonous or hazardous materials in industrial processes poses special problems not existing in other branches of the analytical field.¹⁰ Most other types of chemical analysis are fairly well limited, but in industrial hygiene work, a much wider field

must be covered, since the hazards in industry spread over the vast fields of chemistry itself. Furthermore, it is necessary to detect and estimate industrial substances in concentrations far below any quantity encountered in almost all other branches of the field. This is particularly true for materials whose threshold values fall in the range from 1 to 10 parts per million parts of air by volume.

In industrial hygiene work, the concentration of the contaminant or hazardous material is the matter of chief interest rather than the actual composition of the air. Since these industrial poisons are usually only a small part of the composition of the surrounding air which is to be analyzed, the ordinary methods of air analysis are not applicable.

Sample collection

The collection of the samples to be analyzed must meet certain requirements. If the hazards accompanying a certain operation or process are to be evaluated properly, the sample must conform to the following:

1. It must represent one or more complete cycles of the operation.
2. It must represent normal practice in the operation or process.
3. It must constitute a representative sample of the air in the breathing zone of the operator.
4. It must be collected with a minimum disruption of the operator's work procedure.
5. It should require only a short time for collection, if possible.
6. It should be simple and adaptable to portable equipment.

Analytical methods

As mentioned above, the analytical methods used in the treatment of samples are subject to severe conditions. The methods used must not only be accurate enough to warn of the danger, but also to disclose the degree of danger.¹⁰ The methods must not only be more than sufficiently sensitive to detect the toxic concentrations, but also must work below those concentrations. An ideal method for the chemical analysis in industrial hygiene work should conform to the following requirements:

1. It should be specific for the material examined.
2. It should be sensitive to the degree of the concentration to be encountered.
3. It should be adaptable to routine analysis.
4. It should require a short time to complete the analysis.

Control Measures

When the chemical analysis of the air samples is completed, the results are compared with the threshold values established for the material sampled. If the concentrations found are higher than the accepted threshold value, indicating that an occupational health hazard exists, the problem becomes one of devising a control measure or combination of measures that will bring this material to a safe level.

Experience has shown that harmful materials may be kept under the maximum safe concentrations, if proper control measures are adopted and maintained.¹ The purpose of any control measure is to limit the inhalation of, or contact with, any harmful substance encountered in the particular process considered. The safest measure, therefore, is the one that most satisfactorily controls the harmful substance at its source or origin before it can contaminate the breathing zone of any workman.

Primary measures

There are two principal classes of control measures; primary and secondary.¹ The primary measures are used to control a harmful substance at its source or origin before it can contaminate the breathing zone of the workers assigned to that particular operation. These control measures may vary according to the material encountered and the process involved, and may be listed as follows:

1. Substitution of nontoxic materials for the harmful one. If a nontoxic material can be substituted for the harmful one, the source of contamination is automatically eliminated. However, it must be noted that if the substituted material has chemical and physical properties similar to those of the original substance, it will likely have similar physiologic properties and the hazards will only be lessened—not eliminated.

The substitution of steel shot for flint in abrasive blasting operations is an example of this measure correctly applied. There have been several industrywide applications of this method of control. The substitution of the nonpoisonous phosphorus sesquisulfide for the very toxic white phosphorus in the manufacture of matches solved a severe industrial health problem.¹² This came after the strictest factory regulations had proved ineffective in preventing the development of "phossy jaw." In the foundry industry, one silicosis hazard was eliminated by the substitution of non-silica parting compound (powder dusted onto molds to prevent them from sticking together) for pure silica flour.¹² Sandpaper made from sandstone containing high amounts of silica has been almost entirely replaced with that using syn-

thetic abrasives such as alundum, borolon, or carborundum. The substitution of a mixture of hydrogen peroxide and nitric acid for mercury compounds is now almost industrywide in the fur hat industry and has resulted in the virtual elimination of mercury poisoning in that field of endeavor.¹³

2. Isolation or segregation of offending process. The isolation, segregation or enclosure of the entire process (such that the operation may be carried on mechanically with little or no attention, or such that the harmful material involved does not contaminate the environment of workers not engaged in the process) has been applied successfully to several operations.

Mechanical abrasive blasting units are examples of this measure. Separation of the shake out or casting cleaning operations from the molding area in the foundry is another example. This principle also has been successfully applied to the coating of wires with insulating material of a high degree of toxicity; to the mixing of organic solvents; and in certain explosives manufacturing processes. In these last operations, the reactors are loaded and the process is operated by remote control located at some distance from the point of the operation.

3. Use of wet methods. The use of water has been proved effective in the control of dusts at its source in processes such as drilling and grinding. This measure must always be accompanied by good housekeeping. Particular reference must be given to the removal of any spillage or leakage before the material dries to dust and is scattered into the breathing zone of the workman. The use of wet methods is effective only for dust control, for which it is the oldest known control measure. The recent development of wetting agents has increased the effectiveness of wet methods for allaying dusts.

4. Use of exhaust ventilation. Exhaust ventilation may be applied to the workroom in general or locally at the sources of contamination. General room ventilation is a measure used for control after the contaminant has been allowed to escape into the atmosphere, and is limited to the control of gaseous contaminants. This measure involves the introduction of fresh air to the workroom and removal of an equivalent amount of stale or contaminated air to provide a certain number of air changes in a given period of time.¹⁴ This method may be used to provide proper working conditions by changing the air in the workroom often enough to keep the concentration of harmful substances at a safe level or to remove objectionable body odors produced by the workers.

General room ventilation, while effective in some instances, presents the objection that many instal-

lations actually contribute to the exposure of workmen in certain areas. This condition arises when the system tends to build up the concentration of the harmful material in the area near the site of the exhaust outlet. Men working in such areas are exposed to greater concentrations than those produced by their own activities. At best, general room ventilation is a dilution process, and the contaminant is not prevented from reaching the breathing zone of the workmen. In some cases, particularly when the materials encountered are extremely toxic, this method requires the movement of large air volumes to obtain proper dilution. This results in excessive air velocity and heat loss.

The principle of general room ventilation is widely used, particularly when the workroom air is contaminated with gaseous materials of lesser toxicity. This measure is almost universally applied to metal foundries. In the ordinary small foundry, the molds are placed, and the molten metal is poured, in all sections of the building. The use of wall and ceiling fans, aided by the convection currents set up by the high temperatures attained in the molds, serves to clear the air at a reasonably rapid rate.

Dilution Ventilation

When harmful substances are released generally throughout the workroom rather than at definite points of origin, general room ventilation must be modified. One method attaining wide use has been termed "dilution ventilation."¹⁵ This method aims to dilute the contaminated air in the workroom with a sufficient amount of clean air, so that the concentration of the contaminating material will be reduced to a safe level. The success of this method depends upon the complete mixing of the contaminant with the diluting air for a uniform distribution of the concentration throughout the ventilating space. This method requires less air than the air change method.

The outstanding example of the principle of dilution ventilation is the Holland tunnel under the Hudson River between New York and New Jersey.¹⁶ The exhaust ventilating system for this tunnel is based on the principle of supplying sufficient outside air to reduce the carbon monoxide content of the exhaust gases from the passing cars to a predetermined, presumably safe concentration. The effectiveness of this installation was shown upon medical examination of 156 traffic officers, who had been on duty at the Holland tunnel for thirteen years and four months. The examination revealed that no health impairments indicating the presence of an occupational disease were found.

Local Exhaust Ventilation

Exhaust ventilation can be applied locally at almost any process in such a manner that the contaminating material is captured and removed at its source or origin and never reaches the breathing zone of any workman. This measure is used when harmful substances are released at definite points of origin, and operates on the principle of providing transporting velocity for the particles of the industrial material. This method enjoys the widest use since it is applicable to most operations, and holds the air requirement to a minimum.

The essential elements of a local exhaust ventilating system include the following:¹¹

a. A hood in which to collect the contaminating material.

b. A duct or system of ducts through which the substance may be conveyed from the operation.

c. A fan or blower which supplies the air movement necessary to convey the material.

d. Air-cleaning material equipment to serve the purpose of preparing the exhausted air for discharge.

e. A discharge stack through which the exhausted air is released into the surrounding atmosphere.

Any local exhaust ventilating system installed should conform to the following basic requirements:¹⁷

a. The application of sufficient air velocity to capture and remove the harmful material.

b. The application of a suction as near the source or origin of the material as the work permits.

c. The placing of the hood such that the contaminating material is not drawn through the breathing zone of any workman and that advantage is taken of the kinetic energy of the particles.

d. The control of other air currents in the room which might interfere with the air currents produced by the ventilating system.

e. The disposal of the exhausted material such that the breathing zone of no workman is contaminated.

There is almost no limit to the possibilities for the application of local exhaust ventilation. This principle is so flexible, so easy to apply, and so effective with minimum amounts of air, that it is almost universally adopted. The most common processes or equipment controlled by this means include grinding wheels, paint spray booths, welding operations, metal plating operations, and vapor degreasing operations.

Sometimes the nature of the operation or process does not permit effective control by any one

measure. The automobile repair and storage garage serves as a good example of this class.¹⁸ A special problem is produced by the fact that carbon monoxide is produced from two widely varying sources. One source is mobile, represented by vehicles in the repair stalls. General room ventilation is required to control or dilute the gases from the mobile sources, and local exhaust ventilation, in the form of exhaust ducts connected to the tail pipes of the vehicles in the stalls, is needed to control the gases from the stationary sources.

Secondary measures

The secondary control measures are used in an attempt to protect the worker after a harmful material has been allowed to contaminate his breathing zone or work station. The procedures followed in this type may be combined into one classification as follows:¹¹

The use of personal protective devices. These items include respirators, helmets, gloves, aprons, boots, and other items of similar nature. The personal protective devices have been developed to serve as emergency measures for processes where it is not possible to use one of the primary control measures, where special hazards exist, where the work is temporary or intermittent in nature or where engineering control is not yet installed, is inadequate, or is economically not feasible. Devices of this type sometimes are necessary to supplement the other methods of control.

An example of the supplemental use of personal protective devices is found in the operation of a sand blast cabinet or room. Even though the room is supplied with a high degree of air circulation and complete air cleaning equipment, it still is necessary to provide the operator of the blast with personal protective devices. These devices consist of clothing offering protection against the abrasive particles, and complete respiratory protective equipment furnishing air of a safe nature from the outside.

Effectiveness of Control

If there had been any doubt as to the soundness of the above principles of control, it was effectively dispelled during the war period. In order to attain the tremendous production record, and at the same time to man the armed forces, it was imperative to conserve the working force of the nation and to keep it on the job.

In the civilian firms engaged in wartime production, the application of the proper control measures made it possible to retain trained and skilled personnel in an effective capacity. This condition prevailed in general, although it was

necessary for most plants to convert to activities where the processes and hazards were strange and new to their personnel.

The military industrial establishments were confronted with one complication in the application of the control measures. It was virtually impossible to apply the measure of substitution of a nontoxic material. The main problem was to handle—and handle safely—the agents needed for combat purposes. The results proved beyond a doubt that any material can be handled industrially if proper controls are incorporated into the process. In some instances, it was necessary to work out and install combinations of all the engineering measures and then to parallel them with close medical control of the workers until the proper arrangement was determined.

By the use of these established control measures, chemical warfare agents with threshold values measured in parts per billion (instead of parts per million) by volume were safely handled in industrial quantities. It is interesting to note that no cases of “phossy jaw” were reported during the war period, even though tons of the toxic white phosphorus were processed.

Striking accomplishments were attained in the explosive plants producing ordnance material.¹⁹ During World War I and in the short period of seven and one-half months, 17,000 persons were poisoned by TNT and 475 of these died as a result of these exposures. During that period, the processing of explosives in America was on a relatively small scale. At the beginning of the late war, the decision was made that all efforts would be exerted to avoid repetition of the record produced during the first war. Applications of the control principles outlined above reached extraordinary success. Only 22 deaths occurred from TNT exposures from a total of 968,000 man-years of operation. In these, only 6 deaths occurred during the last 18 months of the war.

Further demonstration of the effectiveness of the control principles was given in the atomic energy project.²⁰ The record attained in the prevention of injury of the many workers is almost as unbelievable as the other phases of the project. Ample evidence that adequate precautions of control were utilized is shown by the fact that the National Safety Council presented the Manhattan District with an award for Distinguished Service for Safety.

Summary

The enactment of an Occupational Disease Compensation law by the Iowa legislature has focused attention on the industrial health hazards in the state. Surveys have shown that nearly all

types of industry are present in Iowa and that industrial practice closely parallels that followed in other states.

The industrial health hazards have three portals of entry into the organism of the worker: respiratory system, digestive system, and skin. These hazards may be placed in two general groups in accordance with their physical nature: harmful substances and harmful conditions. The harmful substances include dusts, fumes, gases, mists, vapors, and infectious materials. The harmful conditions include air pressure, confined positions, humidity, light, noise, pressure, temperature, and vibration. The harmful substances also may be classed in accordance with their physiologic action as follows: protoplasmic poisons, dusts, asphyxiants, irritants, anesthetics, organic nitrogen compounds, and organo-metallic substances.

The demonstrated ability of the human system to tolerate certain amounts of any material has led to the determination of threshold values. These values represent the maximum safe concentrations in which average persons can work continuously for long periods without developing symptoms of physical impairment.

Experience has shown that any harmful substances may be kept under the maximum safe concentration, if proper control measures are adopted and maintained. The control measures applied include substitution, isolation, wet methods, exhaust ventilation, and personal protective devices.

The soundness of these control measures was effectively demonstrated during the war period. They were responsible, in part, for the attainment of the tremendous national production record at a time when the working force was depleted by the manning of the armed forces.

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CLINICOPATHOLOGIC CONFERENCE

John Dooley, M.D., and
Francis C. Coleman, M. D., Des Moines

Clinical History

The case is that of a white male, age 2 years, admitted to Mercy Hospital on June 19, 1946. During the morning of June 18, 1946, the patient swallowed approximately 50 cc. of oil of winter-green from a bottle he picked up in the kitchen. He began to vomit immediately and the vomiting continued for three hours. At this time the child became drowsy and his mother thought he was sleepy. On the morning of June 19 he awoke at 5 a. m. complaining of intense thirst. His respirations were deep and labored, and he was very drowsy. The past history was negative except for a fall to the floor from a landing six feet high five days before. No external injuries were visible after the fall. The family history revealed that a maternal aunt and uncle have diabetes mellitus.

Physical Examination: On admission the temperature was 100.8 F., pulse 130 per minute, and respirations 46 per minute. The child was stuporous. Examination of the heart and lungs was negative except for the rapid pulse and respirations. Mild distention of the abdomen was present, and pressure over the left side of the abdomen appeared to cause pain. All reflexes were normal.

Laboratory Examinations: On admission blood dextrose was 173 mg. per cent. Urinalysis showed specific gravity 1.023, albumin negative, sugar 0.5 per cent, acetone 1 plus. At 7 p. m. on June 19 the blood dextrose was 37 mg. per cent (after insulin). On June 20 at 7 a. m. urinalysis showed specific gravity 1.020, sugar faint trace, acetone 4 plus, and diacetic acid 3 plus. At this time hemoglobin was 10.2 gm. per cent or 66 per cent; red blood cells 3,500,000 per cubic millimeter; white blood cells 26,300 per cubic millimeter, with neutrophils 88 per cent and lymphocytes 12 per cent. On June 21, 1946, blood dextrose was 121 mg. per cent. On June 22 urinalysis showed specific gravity 1.024, reaction acid, albumin negative, sugar negative, and acetone negative. On this same date the white blood cells had dropped to 11,400 per cubic millimeter.

Clinical Course: The child was placed in an oxygen tent immediately after admission. Hart-

man's solution was given intravenously. A retention catheter was inserted. Twenty units of regular insulin were administered. Repeated gastric lavages using 5 per cent sodium bicarbonate were performed. He still vomited occasionally. On June 20 convulsive movements of the extremities were present, which lasted at times for as long as twenty minutes. In between the convulsions, periods of apnea were present, sometimes for as long as fifteen seconds. During these periods cyanosis was marked and it did not completely disappear at any time. He remained stuporous the pulse rate ranged around 130 per minute, and the temperature varied between 101 and 104 F. On June 23 he became comatose. The respirations became more rapid and labored. He expired at 12 midnight on June 23, 1946.



Fig. 1. The heart is dilated. Many subepicardial petechial hemorrhages are present.

Dr. Dooley: Although the diabetic family history and the acetone and diacetic acid in the urine suggest a possible diabetes mellitus, methyl salicylate poisoning must be considered as the most likely diagnosis because of the large amount of drug ingested.

Methyl salicylate poisoning is most common in children where the drug is accidentally swallowed. Only small quantities are required, one fatality having resulted from an ingestion of 4 cubic centimeters. The mortality is highest in children under 3 years of age, being 57 per cent in this group.

Poisoning is sometimes seen in alcoholics who drink the drug for its supposed alcohol content. The symptoms are usually divided into three groups:

- (1) Gastro-intestinal
- (2) Respiratory
- (3) Cerebral

Gastro-intestinal symptoms: The gastro-intestinal symptoms consist of vomiting and diarrhea. Vomiting occurs in 87 per cent of cases and is due to an irritant action on the gastric mucosa. The absorption of methyl salicylate from the gastro-intestinal tract is slow except in the presence of alcohol. Diarrhea may therefore result from the same irritant action. Methyl salicylate can be recovered in the feces after having been ingested by mouth. Pain and burning in the abdomen are complained of by older patients.

Respiratory symptoms: These are deep breathing and dyspnea. A rapid respiratory rate is present in 59 per cent of cases and deep respirations are present in 43 per cent.

Cerebral symptoms: In all except the milder cases of poisoning cerebral symptoms are pronounced. Irritability, mental dullness, stupor, and deep coma may occur. The onset of these symptoms is usually delayed for several hours and in some cases for several days. Stupor or coma are present in 50 per cent of cases and convulsions in 40 per cent. These are all due to direct action of the drug on the central nervous system.

Treatment

A gastric lavage should always be done with sodium bicarbonate, even if the patient is seen several hours after ingestion of the drug, as absorption is likely to be prolonged. A carbon dioxide combining power should always be done before alkali therapy is begun. Shortly after the drug has been swallowed a state of alkalosis may exist, and alkali therapy will enhance this state. Later, as the alkali reserve drops, sodium bicarbonate either intravenously or by mouth can be given. One of the chief aims in therapy is to protect the kidneys, for in the maintenance of their function lies the chief hope of recovery. This can be done through the ample administration of fluids. When the blood glucose is elevated, small doses of insulin may be given along with 5 per cent glucose intravenously.

Pathology

Dr. Coleman: The autopsy was performed two hours after death. The body was that of a white male infant which weighed 30 pounds and measured 85 centimeters in length. The tongue was swollen. The external jugular veins were prominent. The superior and inferior vena cava, as

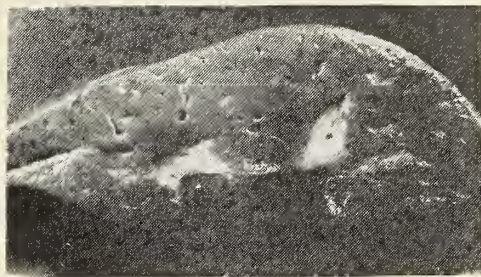


Fig. 2. Many petechial hemorrhages are noted on the cut surface of the liver. The edges of the cut surface are everted.

well as the right auricle and the right ventricle were dilated. Many subepicardial hemorrhages 1 to 2 millimeters in diameter were present. The lower lobe of each lung was firm, bluish red, and the cut surface was wet. The liver weighed 365 grams. Many petechial hemorrhages were noted beneath the capsule. Cerebral edema was present with flattening of the convolutions. The brain weighed 1,360 grams. Marked edema of the gastric mucosa was present.

Microscopic Examination: The myocardial fibers were swollen. The pulmonary alveoli contained many macrophages. Focal areas of necrosis were noted in the liver. Most of these were midway between the central vein and the periphery of the lobules. In these areas the liver cells had lost their cytoplasm and the nuclei were pyknotic. Cloudy swelling of the tubular epithelium of the kidney was present.

Discussion

The gross and microscopic findings in this case were minimal, just as they are in other cases that have been reported. The irritant action on the mucous membrane of the gastro-intestinal tract is well illustrated by the marked edema of the gastric mucosa. The other findings were those of toxicity but they were not marked.

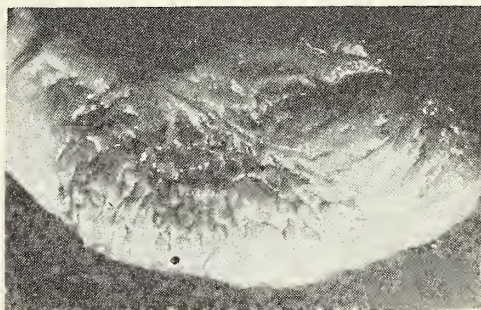


Fig. 3. Marked edema of the gastric mucosa.

The similarities of diabetic acidosis and methyl salicylate poisoning have long been recognized. In both there is usually a decreased blood alkali

(Continued on page 381)

STATE DEPARTMENT OF HEALTH

Walter L. Biering

POLIOMYELITIS IN IOWA AND THE UNITED STATES

Prevalence in Iowa

During the first six months of 1947, reported cases of poliomyelitis in Iowa numbered 18 compared with 27 for the same period in 1946. Of the 18 cases, 6 were reported in January, 2 in February, none in March. Of the remaining 10, 1 case was reported in April, 4 were notified in May and 5 in June. Reports of 2 cases were received in July (through the 12th).

The following table shows the number of cases of poliomyelitis reported during the eleven year period 1936-1946, together with deaths as recorded by the Division of Vital Statistics:

TABLE I POLIOMYELITIS IN IOWA—1936-1946			
Year	Cases	Deaths	
1936	76	13	
1937	241	40	
1938	40	10	
1939	197	30	
1940	927	64	
1941	41	5	
1942	72	3	
1943	204	15	
1944	204	16	
1945	320	25	
1946	620	53	
TOTAL	2,942	274	

Age and Sex of Poliomyelitis Patients—1946

In a series of 275 poliomyelitis case reports, completed through courtesy of Iowa physicians during 1946, age and sex of the patients were as follows:

TABLE II POLIOMYELITIS IN IOWA—1946 Age and Sex Distribution of 275 Reported Cases				
Age Group	Male	Female	Total M. & F. Number	Per Cent in Age Group
0-1	3	1	4	1.4
1-4	37	19	56	20.2
5-9	42	38	80	28.9
10-14	33	16	49	17.7
15-19	22	15	37	13.4
20-29	20	15	35	12.6
30-39	4	8	12	4.3
40-49	1	3	4	1.4
50 and above	0	0	0	0.0
TOTAL	162 (58.5%)	115 (41.5%)	277	99.9

It will be observed from totals in the above table that there was in 1946 about a three to two ratio of males over females. It is of interest to

note that in a series of 345 cases of poliomyelitis recorded in Iowa in 1910, 150 or 45.5 per cent of the patients were under 5 years of age and 247 (71.6 per cent) under 10. In 1946 (see Table II,) only 21.6 per cent were under 5 and 50.5 per cent under 10 years of age. In other words, while a high percentage of total cases occurred in early childhood during the severe epidemic of poliomyelitis in 1910, recent years have witnessed relatively more cases of this disease among individuals of teen age and of adult decades below 50.

Prevalence in the United States

The Health Officers' Weekly Statement as issued by the United States Public Health Service for the week ended Saturday, June 28, 1947, lists 1,200 cases of poliomyelitis for the first twenty-six weeks of 1947, compared with 1,854 for the same period in 1946. The median for the five year period 1942-1946 is 1,084.

With the exception of California, all states reported fewer cases for the week ended June 28, 1947, than for the corresponding week of 1946.

Fly-Abatement Study at Rockford, Ill.

From July 1 through Nov. 11, 1945, Rockford, Ill., experienced an outbreak of poliomyelitis with 321 reported cases. With the purpose of determining the possible part played by flies in the spread of the disease, fly control measures were carried out affecting a four square mile area (pop. 27,215) in the northwestern section of the city, population of which is 85,000 and total area twelve square miles. Spraying operations were begun after the third week in August at a time when the epidemic had already passed its peak.

Methods and results of the study are reported by Melnick and associates.¹ Two tons of DDT were sprayed over the four square mile area using bean orchard sprayers. (The bean orchard sprayer is a truck which for the purpose contains a 1 to 2 per cent emulsion of DDT and is equipped with four nozzles, each held and the stream controlled by an operator.) No hand spraying was

employed, but fly-trapping was an added procedure to reduce the fly population.

"Although a temporary reduction in flies was effected, there was no effect on the poliomyelitis epidemic." Results of the study at Rockford were inconclusive because: (1) spraying was not commenced until after the outbreak had passed its peak, and (2) "striking and prolonged fly control was not achieved."

Manner of Spread of Poliomyelitis

In a recent article, Dauer² reviews findings of various investigators which throw light on the probable means of transmission of the virus of poliomyelitis.

"How the virus of poliomyelitis is disseminated through the population in epidemic and interepidemic periods is still a matter of much dispute, but it appears that the theory of transmission by person to person contact or respiratory spread has been strengthened rather than weakened by recent accumulations of epidemiologic data on the disease. Epidemiologic evidence of a convincing nature is still lacking, which would suggest waterborne transmission, that insects or arthropods commonly are the means of carrying infection, or that food is the medium by which virus frequently is carried from person to person. . . .

"Kessel and Moore have reported the recovery of virus from several pools of tonsils removed from children admitted to Los Angeles hospitals in an interepidemic period. This suggests another fairly substantial reservoir of infection from which dissemination of the virus may occur by means of person to person contact. . . .

"Brown, Francis and Pearson reported finding poliomyelitis virus in the stools of a patient nineteen days before onset of paralytic disease. In their epidemiologic investigation they found that seven persons, including the patient just mentioned, were intimately exposed to a recognized case during the period of four days before to two

days after onset of the primary case. This group was made up of lodgemates in a summer camp in Michigan in 1944. Five of six stools collected from boys in the lodge six days after last exposure contained poliomyelitis virus. Stools and throat washings from boys in other cabins were negative. It seems to be more than coincidence that the only persons having virus in their stools should have had intimate exposure with the primary case during the period of a few days prior to onset and two days thereafter. . . .

"These observations made by a number of investigators, namely, that transmission of infection does take place in the interval between a few days before to a few days after onset of a case, in conjunction with the findings of Howe that virus can be recovered from the secretions of the oropharynx in a large proportion of cases not longer than 4 or 5 days following onset, is highly suggestive of spread through secretions of the oropharynx. However, it is quite probable that the majority of infections are transmitted by individuals who exhibit no recognizable symptoms, rather than by recognized cases.

"The role which the fecal carrier plays in dissemination of poliomyelitis virus is unknown at the present time. However, it can be stated that outbreaks have not been observed in which it has been proved that they have played a definite part. Furthermore, it has never been demonstrated that a close correlation exists between incidence of the disease or infection and sanitary conditions of the environment either in the home or the community. The concept of spread of infection by transfer of secretions from the oropharynx through person to person contact continues to be the only one which is consistent with observed facts."

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MORBIDITY REPORT				Most Cases Reported From
Diseases	June '47	May '47	June '46	
Diphtheria	7	10	16	Cedar (3), Fayette (2), Johnson, Poweshiek
Scarlet Fever	54	94	68	Sac, Des Moines, Webster, Woodbury
Typhoid Fever.....	9	0	0	(See below)
Smallpox	0	1	1	.....
Measles	739	1730	644	Warren, Clinton, Johnson
Whooping Cough	187	106	152	Warren, Dubuque, Black Hawk
Brucellosis	61	31	95	Scattered
Chickenpox	279	392	138	Dubuque, Linn, Woodbury
German Measles	23	17	0	Dubuque (20), Boone, Story, Washington
Influenza	0	71	0	.....
Malaria	0	2	19	.....
Meningitis	3	4	6	Clinton, Muscatine, Woodbury
Mumps	35	76	143	Black Hawk, Linn, Woodbury
Pneumonia	11	12	6	Black Hawk, Marion
Poliomyelitis	5	4	8	Dubuque (1), Polk (3), Wright (1)
Tuberculosis	48	63	53	For the State
Gonorrhea	96	157	181	For the State
Syphilis	276	132	139	For the State

Counties reporting Typhoid Fever:
One case each from the following counties—Benton, Clarke, Dubuque, Linn, Monona, Muscatine, Sac, Woodbury, Wright.

The JOURNAL of the Iowa State Medical Society

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Poliomyelitis

Although the incidence of poliomyelitis has been less this year than during 1946, this issue of the JOURNAL has been prepared as a symposium upon this timely subject.

This disease is a widespread, usually mild, general systemic infection which probably belongs to the respiratory group but which is occasionally complicated by involvement of the central nervous system. Poliomyelitis is a virus disease and primarily an intracellular infection. The care of patients with central nervous system involvement is not a matter of treatment directed against the virus but rather a matter of preserving the usefulness of muscle fibers which have not been deprived of nerve supply.

Collins* has reported that the fifteen year average incidence from a number of localities is approximately 5.7 cases per 100 in the white population. He also found that one-third of the crippling in children up to 15 years is due to poliomyelitis.

The best treatment in this disease is early treatment; many children's lives can be saved if seen early and the disease recognized early; many disabilities may be averted with early and persistent routine care. The objectives in treatment are: (1) to save the patient's life; (2) to stop the spread of paralysis; (3) to treat involved muscles in the quiescent stage. Pediatric care and

nursing are of great value early in the disease. If the patient with bulbar involvement survives for forty-eight hours without an extension, the disease usually stops spreading and recovery (if the disease is solely bulbar in type) is complete. It is the little but important things that count, such as aspiration of mucus from the throat, postural drainage, purgation, sedation, oxygen and nursing care. Parents must be made to realize that the best possible results are obtained by institutional treatment of the child, even though the period of treatment may run as long as two years. Early diagnosis, early and persistent treatment, and orthopedic care will do much for the effective control of poliomyelitis.

Occupational Disease Compensation Law

During the last meeting of the Iowa legislature an occupational disease compensation law was enacted. Elsewhere in this issue there appears an article discussing some industrial health hazards and their control prepared by C. L. Campbell, Ph.D., of the State Department of Health. It is suggested that interested physicians file this article for reference.

It is the plan of the JOURNAL to present in the future the special articles dealing with some sixteen specific health hazards. It has been found that claims under similar laws in other states will approximate 65 per cent for dermatitis; hence, the first article will deal with this problem.

The JOURNAL is grateful to the State Department of Health for preparing discussions of health hazards occurring in Iowa industrial plants. The special articles should prove helpful in the interpretation of the new compensation law.

Cancer Institutes

It is reliably estimated that there are in Iowa more than 13,000 sufferers from malignant disease. Of these, at least half will die because even if recognized early, little or nothing can be done for them. The hope for this group lies in the discoveries that may result from the development of research.

About 25 per cent will be saved by surgery and radiation and another 25 per cent, many of whom could be saved, will die because treatment was either delayed or inadequate.

In the light of our present knowledge, only two things will remedy this situation. First, lay education must make the public aware of the futility of awaiting discoveries of the future in prophylaxis.

*Collins, Selwyn D.: The Incidence of Poliomyelitis and Its Crippling Effects, as Recorded in Family Surveys. Public Health Reports, lxi:327 (March) 1946.

laxis or specific cures and bring them to an early utilization of the facilities now available. As the people become better informed, however, they begin to demand an activation and implementation of cancer control measures, and this is solely the responsibility of the medical profession.

Eight County Medical Societies in cooperation with the State Department of Health have already instituted active tumor clinics wherein consultation with a group of specialists is made available to physicians in all cases of suspected cancer, regardless of the patient's financial status.

But this is not enough,—patients are not admitted to the clinic unless referred by their physician. The doctor, either the general practitioner or the specialist, who first sees the patient, has the greatest responsibility. This responsibility cannot be waived by merely shifting the patient to someone else. The matter is too grave and delay increases the danger.

In order to improve the diagnostic skill of the physician and to increase his degree of suspicion, the Cancer Committee of the State Medical Society is cooperating with the Iowa Division of the American Cancer Society and the Division of Cancer Control of the State Department of Health in organizing a series of tumor institutes.

A Sub-Committee representative of the three agencies has been appointed by Dr. Plass, Chairman of the Cancer Committee of the State Medical Society, to work out the details. It is probable that the institutes will be held during September and October in a number of the larger cities and if they prove successful there, will later be carried into the smaller centers.

It is proposed now that they consist of a full day's program with recognized leaders in the cancer field, both from in and out of the state. Emphasis will be put on the practical side of the diagnosis and handling of the commoner forms of malignancy.

A complimentary dinner will be provided and certificates of attendance will be awarded.

The doctor's responsibility in cancer control cannot be shirked. It is urged that every physician in the areas where such institutes are to be held will devote a day to refreshing his knowledge of cancer. There will be no registration fee,—no charge of any kind. The programs planned will be of sufficiently high caliber to justify the sacrifice of time entailed.

Further details will be mailed to County Society officers in the near future and the whole program will be published in the next issue of the JOURNAL.

Meeting of the House of Delegates of the American Medical Association

The House of Delegates of the American Medical Association was called to order at the Atlantic City session on Monday morning, June 9, by Dr. R. W. Fouts, Speaker of the House, with 173 of the 175 delegates present. The Distinguished Service Award was made to Dr. H. A. Christian of Boston.

Dr. Fouts in his address as speaker stressed changes in procedures of the House; Dr. Shoulders in his talk as president discussed the economics of medicine, emphasizing that in the past when little could be done for disease, the cost was small and the mortality high; that now much can be done; the cost is greatly increased and the mortality greatly decreased. He also mentioned the pressing need for general practitioners.

Dr. Bortz, president-elect, gave a most thoughtful talk and the recommendations he made were adopted in toto. They include the following:

1. A two day scientific session for general practitioners at the time of the semi-annual meeting of the House of Delegates. Change of meeting place for the semi-annual session so that all sections of the country may be hosts.

2. Closer affiliation of third and fourth year medical students with the American Medical Association.

3. Greater publicity of the activities of the councils and bureaus of the Association; clarification of public relations activities, and more experienced speakers for lay groups.

4. Greater utilization of the Woman's Auxiliary as an instrument in the field of public relations.

5. Establishment of a committee on nursing problems.

6. Active cooperation by the Association with governmental officials to work out a program for prompt medical service in case of another national emergency.

7. Consideration of a future building program for the headquarters building.

The three addresses mentioned above may be found in the *Journal of the American Medical Association*, June 21 issue, and merit the careful consideration of all physicians.

The Surgeons General of the Army and Navy, Raymond W. Bliss and Clifford A. Swanson, addressed the House Monday afternoon, both stressing the need of the armed forces for physicians, and both dealing with plans for meeting that need. Rear Admiral Joel T. Boone was also given the privilege of the floor and discussed

further the survey made of the coal mines last year and developments since that time.

Supplementary reports of councils, committees and officers were also given Monday afternoon. Prominent among them was the resignation of Mr. Raymond Rich and Mr. Charles Swart as public relations counsel for the Association. The report of the committee on national emergency medical service stressed the need for a continued committee or council to cooperate with the armed services and the medical profession of the country so that in case of emergency, medical care could be organized at once. Later in the meeting this recommendation was accepted.

The report of the Council on Medical Education and Hospitals dealt particularly with upholding prestige of general practitioners and made definite recommendations for according them a place in hospital organizations. This recommendation also was accepted later by the House of Delegates.

The report of the Council on Medical Service again offered the cooperation of the medical profession to the United Mine Workers in setting up the miners' health fund; it recommended a conference with the Veterans Administration in regard to the Home Care Program and the establishment of an official body to work with the Veterans Administration; it elaborated on the American Cancer Society program, and told what had been done in the study of cash sickness benefits.

Tuesday many foreign guests were presented to the House, and this curtailed the amount of business transacted although it provided a most interesting and friendly session. The House was called into session Wednesday afternoon and again Thursday morning, with the final session being held Thursday afternoon.

Work on revising the constitution and by-laws was begun last year; it was discussed at the December meeting and again at the Atlantic City session, but final action was deferred until next year. Although it would have been possible to revise the by-laws at this session, the constitution necessarily would have to lay over a year, and it was felt best to do the whole revision at once rather than have a variance between the two. Revision, or clarification, of the principles of medical ethics is also in process by the Judicial Council.

The meeting place for the annual session is ordinarily chosen three years in advance so that there will be enough time to plan the many activities and sessions of the Association. St. Louis was to have been host city for 1948 and New York City for 1949. However, the rapid growth of the meeting has made it difficult for most cities

to take care of it, and St. Louis fell far short of having enough hotel rooms. Consequently the 1948 meeting will be held in Chicago instead, and the 1949 meeting in Atlantic City rather than New York. San Francisco was chosen as the site for the 1950 meeting, with the understanding that by that time other cities in the country might have more adequate facilities than they do at present and so could be considered in the future.

Election of officers elevated Dr. Roscoe L. Sensenich of South Bend from chairman of the board of trustees to the office of president-elect. Dr. Thomas A. McGoldrich of Brooklyn was made vice president; Dr. George F. Lull re-elected secretary and general manager; Dr. Josiah J. Moore of Chicago re-elected treasurer; Dr. R. W. Fouts of Omaha, speaker, with Dr. F. F. Borzell of Philadelphia vice speaker. Dr. Dwight H. Murray of Napa, Calif., was re-elected to a five year term on the board of trustees; and Dr. Edward J. McCormick of Toledo was moved from the Council on Medical Service to the trustees for a five year term.

Dr. Lloyd Noland of Fairfield, Ala., was re-elected to the Judicial Council; Dr. John H. Musser of New Orleans was re-elected and Dr. William S. Middleton of Madison elected to the Council on Medical Education and Hospitals; Drs. Stanley F. Reimann of Philadelphia and L. B. Jackson of San Antonio were elected to the Council on Scientific Assembly; Dr. James R. McVay of Kansas City re-elected and Drs. Elmer Hess of Erie, Pa., and Jesse D. Hamer of Phoenix elected to the Council on Medical Service.

The net income of the Association was much less in 1946 than in 1945 due to increased operating costs and an expanded personnel. An increase in fellowship dues may be necessary in the future, but for the time being the Association will continue its many activities on the same basis as it has for the past few years, taking the view that it is a service organization, not a profit-making concern.

The recommendations of the House of Delegates for increased activities in many lines indicate a trend toward more forceful participation in economic and legislative phases of medical care. There was no evidence of passive acceptance of whatever might come, but rather a determination to work out solutions to existing problems.

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Committee on Medical Service and Public Relations

State Meeting on Medical Service and Public Relations

It would seem that the present era, beginning with the end of World War II, has been characterized by an increasing public clamor for higher wages and benefits of every description. People are asking for a share of the products of so-called progress and too often they proceed without caution or any thought that they may be killing the goose that laid the golden egg. We as medical men are not immune from the impact of this demand because we are being asked to supply some of the contributions to this social revolution, particularly those involved under the broad heading of social security. Many of the proposals would alter irreversibly the future of medical practice.

Powerful and well organized groups are behind many of these movements. Labor is seeking increased medical benefits for itself; the veterans are constantly trying to broaden their medical privileges, the farmers and people in isolated areas of our country are asking for more and better medical facilities. Organizations sponsoring the control of tuberculosis, cancer, poliomyelitis, etc., are constantly seeking means to obtain more medical help. Too often in the past these groups have had to move independently of the medical profession and have been obliged to look toward demagogues for sympathy and support because doctors have been inclined to be unconcerned about their problems.

The future of American medical practice will depend in a large measure on our attitude toward present day trends. We can no longer afford to be negative, indifferent or noncommittal about these matters. It is essential for us to try to understand the wants and desires of the people with whom we must associate and do business, to consider carefully their needs, rights and privileges and to meet them in a spirit of understanding, cooperation and helpfulness. By so doing we can work out a plan from which both the medical profession and the public alike can proceed toward a solution which will be to our mutual benefit.

The medical men of America can direct most of these movements if they as individuals would only choose to do so. In order to be most effective, direction must start at home, in the smaller communities where most of them originate and where their purpose and solutions are best understood, not in Washington after they have acquired momentum in the wrong direction. Every physician, no matter where he lives, owes an obligation to himself and his profession to keep informed about these socio-economic trends. He should be willing and ready to supply his patients and fellow citizens with intelligent answers to their questions and more particularly be able to meet with and discuss current problems with the various groups in his community who might have such problems for consideration.

The Committee on Medical Service and Public Relations of the Iowa State Medical Society believes that much of the necessary information on economic matters is not reaching our individual physicians. For your information a meeting is being planned for this fall in Des Moines. Capable speakers will discuss these problems and it is hoped everyone attending can express briefly his views on the questions and perhaps offer some suggestions. We are sure that the meeting will be worth your while from a personal as well as a professional standpoint. There will be an early announcement of the date and program. Every member of the State Medical Society is invited to attend. We hope you will be present.

Fred Sternagel, M.D.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p.m.

WSUI—Thursdays at 2:45 p.m.

August 6-7 Nerves

John I. Marker, M.D.

August 13-14 Foot Defects in Young Children

Donald C. Konzett, M.D.

August 20-21 Not scheduled

August 27-28 Is Your Child Ready for School?

George J. Klok, M.D.

VETERANS ADMINISTRATION

The Epileptic Veteran*

"If the incidence of epilepsy among World War II veterans were the same as among men coming before draft boards in World War I, namely 0.5 per cent, epileptic veterans would now number nearly 100,000. This number would be augmented by the cases of post-traumatic epilepsy incurred during military service, since about one-half of the 15,000 wounded who survived penetrating injuries of the brain in the recent war will become epileptic. It should, however, be less than this because of the screening of World War II inductees by the induction boards, a screening so notably absent in World War I that 98.7 per cent of epileptic soldiers were judged to have been epileptic on enlistment. The number of veterans at present afflicted with epilepsy is not known, but may be as high as 50,000.

"In recent years, important advances in the diagnosis and drug therapy of epilepsy have been made. If this knowledge is fully utilized, authorities believe that at least three-fourths of genetic (essential) epileptics can be rid of at least three-fourths of their seizures. The Veterans Administration is setting up a program designed to give the best available care to veterans subject to epilepsy, and a special program for the treatment and follow-up of veterans receiving either medical or neurosurgical care has been instituted. Social and psychologic assistance, and rehabilitation and employment are considered important phases of this treatment. It is planned to establish a special diagnostic, research and training center at the Veterans Administration Hospital, Framingham, Mass. This Epilepsy Research Center would receive patients who present special diagnostic or research problems.

"... Veterans with epilepsy, whether service-induced or not, have privileges of education and training under the G. I. Bill of Rights and enjoy the Veterans Administration facilities for rehabilitation and employment.

"... The American Epilepsy League is organized for the purpose of educating the public, and helping both doctors and patients to solve the social, economic and psychologic problems which confront the epileptics. The Veterans Administration has engaged this organization to supply information and counsel without charge to all those concerned with the problems of epilepsy.

This includes veteran patients and their families, agencies such as the American Red Cross, rehabilitation centers, employment groups and also physicians, both veteran and civilian, who have the privilege of treating epileptics. Patients may be advised to join the American Epilepsy League (one dollar per year) and receive its books and pamphlets. Requests for membership in the League and for literature and counsel regarding the social problems of epilepsy may be addressed to the League at 50 State Street, Boston 5, Mass.

"Interested physicians may also join the International League against Epilepsy and receive the journal *Epilepsia* (dues \$3.75 for four years.)"

*The above information pertaining to the epileptic veteran is quoted from Veterans Administration Technical Bulletin 10-28, Apr. 30, 1947. Because of the large number of epileptic patients, we believe physicians in the state will be interested in these excerpts.

Clinicopathologic Conference

(Continued from page 375)

reserve. Recently, however, several cases of salicylate poisoning have been reported in which the CO₂ combining power was normal. It is now believed that the acidosis in salicylate poisoning is not due to disturbed fat metabolism alone as in diabetes mellitus, but also to the liberation and accumulation of other fixed acids in the blood. This acidosis in salicylate poisoning is thought to occur as a later manifestation by some people. They feel that the salicylates have an irritant action on the respiratory center, producing hyperventilation. This results in a liberation of carbon dioxide through the lungs with a corresponding reduction in fixed alkali in the blood by the excretion of an alkaline urine. Kidney function is later decreased as a result of the direct action of the drug, as indicated usually by retention of urea nitrogen and nonprotein nitrogen. Blood chlorides may be normal or slightly below normal, but concentrations of sodium and potassium are usually below normal. Particularly in those cases with persistent vomiting and dehydration there is a loss of intracellular potassium. Acidosis finally results from the presence of ketone bodies, an increase in blood lactic acid, and an increase in blood amino acids. Carbon dioxide combining power determinations are very important in these cases in guiding therapy to restore acid base balance.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. FRED MOORE, Des Moines

President-elect—MRS. A. G. FELTER, Van Meter

Secretary—MRS. CHARLES A. NICOLL, Panora

Treasurer—MRS. NOBLE IRVING, Des Moines

PRESIDENT'S MESSAGE

Summer is not only the time for relaxation but also a time of preparation for organizations whose plans must officially take form in the early fall. The Iowa Auxiliary is one of those organizations. In order that we may undergird our Auxiliary year with wise planning, may I ask the wholehearted cooperation of all our county auxiliaries and members at large in promptly answering all our requests for information and help? We all realize that the effectiveness of our work as a state auxiliary is in direct proportion to the effectiveness of each county auxiliary and each auxiliary member.

Our task is a challenging one because of the greater recognition being given the Auxiliary by the medical profession and the responsibility it places upon us. As we go into this new year, may we develop friendliness in our groups and grow in our common task of building good public relations and sponsoring worthwhile projects.

Mrs. Fred Moore, President

MEET YOUR AUXILIARY AT THE FAIR

This year the Auxiliary is enthusiastically promoting the work of nurse recruitment. Various nurse and hospital associations have, during these last few months, emphasized the great need for nurses and have greatly helped increase the enrollment for 1947. Now we hope to keep this need before the public as much as possible. Every doctor's wife has a job in her community, regardless of its size.

Through the kindness of Dr. Walter L. Bierring and the Iowa State Board of Health, we will have a place in their headquarters at the Iowa State Fair. We hope every doctor's wife who attends the fair will visit this booth, meet the women in charge and learn what she can do to help.

To add interest, a film portraying a nurse's life will be shown through the courtesy of the Iowa Federation of Women's Clubs. One which every girl should see, this picture will be shown August 27 from 1:30 to 2 p.m. and August 28 from 10 to 10:30 a.m. This same film will be available whenever members can arrange to have a meeting in their own town. Please make an effort to see this film and tell any girl who might be interested in it.

We need your cooperation if we are to succeed. Your auxiliary must be a working organization if it

is to grow and be of service to the medical profession. What could be more important to you?

Remember, we have a nurse's loan fund which will help anyone who needs such help.

Mrs. William R. Hornaday,
Chairman, Nurse Recruitment

DELEGATES' REPORTS OF THE CONVENTION OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

The convention celebrating the hundredth anniversary of the establishment of the American Medical Association was held in Atlantic City, N. J., June 9 to 13 inclusive with 15,667 registered attendance, the largest assemblage of physicians ever held anywhere in the world.

The Woman's Auxiliary to this association was founded twenty-five years ago. The headquarters of the Auxiliary are now permanently established in the headquarters of the Association where planned regular conferences with the Board of Trustees and directing body of the Auxiliary will be held.

One hundred and twenty-five million special postage stamps commemorating the event were released to the public in recognition of the distinguished services of medicine to humanity.

The fashion show on June 9 in the ballroom of Convention Hall was a gala affair with Conover and Powers models participating. The music at this event, as well as throughout the other functions, was unusually fine.

Tuesday, June 10, marked the formal opening of the Woman's Auxiliary to the American Medical Association. It was held in Haddon Hall, Vernon Room, with the president, Mrs. Jesse D. Hamer, presiding. The program consisted of invocation; greetings; address of welcome and response; presentation of the convention chairman, Mrs. David B. Allman; the president's address; and reports of officers. At noon a luncheon in the Rutland Room honoring past presidents was held. Miss Lucile Petry, Division of Nursing of the U. S. Public Health Service, Washington, D. C., addressed the group.

The afternoon session consisted of reports and a round-table discussion.

The evening of June 10 was the opening meeting of the American Medical Association held in the ballroom of Convention Hall. A capacity audience assembled early to hear the magnificent concert by the Philadelphia Festival Orchestra. The last number

was a march dedicated to the victory of Iwo Jima composed by the president of the Association, Dr. Edward L. Bortz. Over sixty distinguished guests from all parts of the world were presented. Flags of all nations were used as decorations.

Dr. Bortz, in his presidential address, stated the following: "The Woman's Auxiliary represents probably the most important instrument in the field of public relations which organized medicine has, and yet its value has been for the most part overlooked. In many ways the Woman's Auxiliary can explain to the public the ideals and objectives for which medicine stands. A word of caution to the members of the Auxiliary as to the Association members: a well informed mind using statements based on factual data available from the Association files is essential before any statements are made to public groups. The Woman's Auxiliary should utilize the publications of the various bureaus and should seek counsel from the headquarters staff in order that a clearer understanding may exist of the issues at stake. Armed with this information, the Woman's Auxiliary may play a determining role in its contacts with women's organizations, ladies of the press, religious groups, and, not least in importance, the women members of legislatures. The Woman's Auxiliary is facing a period of expanding opportunity."

During the morning session on June 11 an impressive memorial service was conducted by Mrs. Ralph Eusden of California, followed by reports of the state presidents. When announcing the reports, Mrs. Hamer called them the heart of the Auxiliary. Organization seemed to be stressed in most of them. An interesting fact brought out was that the Oregon State Medical Association pays the dues of the Auxiliary members when paying their state dues.

At noon a luncheon in honor of Mrs. Jesse D. Hamer, president, and Mrs. Eustace A. Allen, president-elect, was held in the Vernon Room, Haddon Hall. Dr. H. H. Shoulders, president; Dr. Edward L. Bortz, president-elect; and Dr. Morris Fishbein, gave addresses.

The afternoon session consisted of election of officers and their installation, presentation of the president's pin by Mrs. Rollo K. Packard, and the inaugural address by Mrs. Eustace A. Allen.

On Thursday the group was taken by bus to Egg Harbor City to visit the Renault Champagne Winery. After a tour through the winery, the members were entertained at a garden party and served samples of the product.

The annual dinner for the members of the Woman's Auxiliary and their husbands was held in the Vernon Room at Haddon Hall. It was followed by the reception and ball in honor of the president of the American Medical Association in the ballroom of Convention Hall.

Auxiliary members spent any extra time in the exhibition of the American Physicians Art Association where many interesting paintings, etchings, drawings, and photographs were on exhibit. Among them were a pink rose quilt, hand painted water pitcher,

and feather-edged star quilt, prize winners of Dr. Jeannette Dean-Throckmorton, Des Moines.

The magnolia gavel used at the first meeting of the Auxiliary twenty-five years ago was the gavel used at this meeting by Mrs. Hamer.

For those who visited Atlantic City for the first time as well as for those who were making return journeys there, one of the highlights in the memories that linger will be the famous board walk, known the world over. Cooled by a refreshing ocean breeze, one can stroll for miles here and enjoy the panorama of lights and colors, hotels and theaters, with throngs of humanity in search of entertainment and relaxation, truly an anticlimax for a war torn world.

Mrs. S. S. Westly, Delegate

The program of the twenty-fourth annual meeting of the Woman's Auxiliary to the American Medical Association, was one of the most interesting and efficiently conducted of the organization.

Atlantic City is an ideal place for a convention. Haddon Hall auditorium was also ideal for the meeting. Mrs. David B. Allman, general chairman, was an excellent manager, and every detail was well executed.

The president, Mrs. Jessie D. Hamer, was gracious and considerate at all times. The meetings were well planned and opened and closed on time. One could not help but be impressed by the seriousness of the delegates and officers. There was no need for music or other diversion to hold the attention of the audience.

The total registration for the meeting was 2,205. A number attended the meetings who did not register.

Members will look forward to reading the chapter on the first twenty-five years of the Auxiliary written by Mrs. Hamer for the History of the American Medical Association recently published.

Reports were sent from forty-three states. Two minute reports were given by the state president or a representative. The full reports will be published in the next issue of the Bulletin as will be the reports of all the officers and chairman, and the addresses given.

The addition of Rhode Island and North Dakota this year brings the total number of states organized to forty-five. Massachusetts is expected to join soon. We now have over 36,000 members, an increase of over 7,500 for the year.

California reported an increase from 802 to 3,016.

Most of the states reported an increase in both members and interest.

A few of the objectives of the programs reported were as follows: (1) mould public opinion to give correct information on medical care; (2) build a feeling of friendship between the doctors and the wives; (3) know what the medical profession means to the human race; (4) learn what our community can do to improve its health; (5) be prepared to discuss public health matters on any occasion.

Several states reported having their own magazines. Iowa is fortunate in having our woman's page published by the JOURNAL at no expense to us.

Michigan reported a program on sex education; Maryland has adopted a Holland doctor's family; Mississippi observes Doctors' Day; Nebraska keeps doctors' wives at the polls; Washington, D. C., had a white elephant sale in which they realized \$1,033. They gave \$1,000 to the medical library. Virginia has a memorial fund; New Jersey has its own seal.

Several states reported schools of instruction for chairmen and county presidents.

Mrs. James P. Simonds of Chicago was made an honorary member because of her many years of excellent work on the editorial committee.

At the annual luncheon of the Auxiliary, Dr. H. H. Shoulders, the president of the American Medical Association and Dr. Edward L. Bortz, the president-elect, spoke highly of the accomplishments of the Auxiliary and the possibilities of achievement.

The 1948 meeting will be in Chicago; it is hoped that more of our Iowa members will be able to attend.

Dr. R. L. Sensenich of South Bend, Ind., was elected president-elect of the American Medical Association. He has been on the Advisory Council to the Auxiliary for many years and has shown a great interest in all activities.

The following officers were elected:

President—Mrs. Eustace A. Allen, Atlanta, Ga.

President-elect—Mrs. Luther H. Kice, Garden City, Long Island, N. Y.

Constitutional Secretary—Mrs. G. Turner, El Paso, Tex.

Treasurer—Mrs. A. A. Herold, Shreveport, La.

First Vice President—Mrs. David Ballman, Atlantic City, N. J.

Second Vice President—Mrs. Leo J. Schaefer, Salina, Kan.

Third Vice President—Mrs. E. Arthur Underwood, Vancouver, Wash.

Fourth Vice President—Mrs. W. W. Potter, Knoxville, Tenn.

Directors—Mrs. J. J. Bridenstine—Terry, Mont.; Mrs. U. G. McClure—Charleston, W. Va.; Mrs. David S. Long—Harrisonville, Mo.

The *Bulletin* is the official magazine of the Auxiliary. It is published quarterly, and the price is \$1.00 a year. Send your subscription to your county chairman, the state chairman, or directly to Miss Margaret Wolfe, 535 North Dearborn St., Chicago 10, Ill.

Mrs. E. T. Warren, Delegate

The delegates from the Woman's Auxiliary to the Iowa State Medical Society who attended the National Auxiliary meeting in Atlantic City June 10 were: Mrs. Marion H. Brinker, Jefferson; Mrs. Soren S. Westley, Manly; Mrs. Elbert T. Warren, Stuart; Mrs. Harold J. McCoy, Des Moines; and Mrs. C. T. Maxwell, Sioux City. Mrs. G. V. Caughlan, Council Bluffs, attended as an alternate delegate.

THE CRIPPLED CHILDREN'S PROJECT IN SIOUX CITY

The Sioux Med-Dames, the Medical Auxiliary Chapter in Sioux City, after contacting the local crippled children's organization, invited Mrs. Dorothy Phillips, Executive Secretary of the Iowa Crippled Children's Society, to speak on the needs of crippled children in the state and the immediate community in order to help them select some project of benefit.

She named such things as financing day camp for those in particular need of it, payment of hospitalization, or sales to give an outlet for the articles which the children make. They selected the latter and have planned one sales day for spring and one for fall.

The spring sale which was held at one of the local stores, was a great success. The Crippled Children's Project Auxiliary chairman, Mrs. Ayres, who is also on the local crippled children's board, cooperated with that organization in collecting the articles and took charge of the sale. Members gave time during certain hours of the day for the selling of the large number of varied items which ranged from hand-knit wash cloths to the best sellers—hand tooled leather goods.

Things which were left at the end of the sale were taken to the next meeting where they sold remarkably well.

This project is purely charitable, and has been found to be not only beneficial for the handicapped but also a decided stimulus for the Auxiliary.

Mrs. Howard Ivan Down

PROFESSIONAL AND COUNSELING SERVICE FOR NURSES

Despite the nurse shortage in Iowa, doctors in search of a registered nurse helper now have the opportunity to list their needs through the Professional and Counseling Service of the Iowa State Nurses' Association.

During the past year nearly one hundred openings were listed with the service and numerous positions in hospitals, industrial firms, offices and schools were filled from the ranks of Iowa nurses registered with the agency. In addition, counseling on further education or opportunities for advancement are available to any of the more than 14,000 registered nurses of Iowa.

If no nurses can be found in Iowa for openings occurring in the state, the American Nurses' Association Professional Counseling and Placement service is contacted at the Chicago office. In charge of the Iowa Placement Service is Miss Jessie Norelius, Executive Secretary, Iowa State Nurses' Association, 503 Shops Building, Des Moines.

"One of the best inducements to make a career of nursing is the fact there'll be a job for you when you finish your training," Miss Norelius said. She added, however, that the Iowa State Nurses' Association is making a special effort to assist nurses to find positions they are best qualified for, and at the same time aiding employers in finding the nurse best suited for a given position.

BENEFITS OF BLUE CROSS

Dollars do not slip through fingers as easily and as thoughtlessly as they did a year or so ago. The purchaser is shopping for values; the housewife is planning around a more carefully budgeted household cost; we are moving slowly into the buyer's market again. It is not surprising that questions are beginning to arise as to what the average health dollar in a family should buy and what an over-all health tax might bring through federal programs. Comparisons are being made, many without too much thought or actual facts behind them.

Every thinking American is anxious to have our people standing on their own feet, taking care of their own as far as living costs are concerned. It was with this idea in mind that the hospitals of the nation started the Blue Cross Plans and the doctors of medicine organized Medical Plans. Blue Cross is a prepayment plan for hospital care, sponsored and guaranteed by the hospitals themselves, and in view of the fact that its benefits are extended on a "service" basis rather than on a limited cash indemnity plan it would seem highly improbable that any other could give better hospitalization coverage. The medical plan of Iowa is on the same basis for people in the low income brackets.

"Service" benefits are based on the services necessary for adequate, needed care of members. Practically all of the benefits on the Blue Cross contract of Hospital Service, Inc., of Iowa, Des Moines, are unlimited. For instance, all drugs are provided, including the new drugs, penicillin and streptomycin, which are indicated for certain conditions, are widely used at the present time and are very expensive. Laboratory services are being used more and more as medical science progresses. There are no limits on those services in the hospital. Obstetrical care includes the highly specialized nursery care of the infant and other extra services.

The only limited benefits offered by the above mentioned Blue Cross Plan are: (1) room accommodations are limited to \$4.75 a day at the present time; (2) x-ray is limited to \$15 for each admission; and (3) administration of anesthetics is limited to \$10 for each admission. All other services are given in any needed amount regardless of the cost.

Our Blue Cross Plan pays approximately 85 per cent out of the prepayment dollar for hospital care of its members, which compares favorably with other programs, but that very fact also places a grave responsibility on all concerned to hold unnecessary use of these privileges to a minimum in order to continue such a desirable program. Dependents on a Blue Cross "Family Contract" are entitled to the same coverage as the subscriber himself even though statistics show they use much more hospital care than the subscriber does.

Blue Cross has paid hospital bills of \$800, \$900, and even higher. Those are unusual amounts but ones to which any person might be subjected. It does indicate that the protection is elastic enough to cover

the unforeseen and unpredictable amounts. Statements are itemized by the hospitals so there need be no doubt in the mind of the subscriber as to just what services he has used. The payments on the contract services are made directly to the hospital which eliminates the temptation of the subscriber to pay other seemingly more urgent bills with the money received for his hospital bill. He has no further responsibility after he signs for the services he has received in the hospital. The Blue Cross Plan and the hospital arrange the payment.

There is no doubt but there is an element of danger from overutilization in a service plan, but there are dangers in any program. Doctors, hospitals, civic leaders and plan executives are the leaders who can work together guiding the voluntary program so it will work. Shall not we, the professions offering the services, encourage people to budget for their hospital, medical and surgical care themselves, using the nonprofit plans to get the most out of the money they spend for health purposes? We have an obligation to do it.

NEW INDIANA ANNUAL REGISTRATION LAW

Indiana recently passed a law requiring annual registration of physicians which becomes effective July 1, 1947. The law reads in part:

"That, every person who now holds, or may hereafter hold, a valid and unrevoked certificate for a license to practice the Healing Art in any form or manner, granted by the Board of Medical Registration and Examination of Indiana, shall be required to register with said Board, during the month of July and not later than the last day of August, immediately following the effective date of this Act, which registration shall be for the period ending June 30, 1948, and shall annually thereafter, on or before August 31st of each year, be required to register with said Board.

"Each applicant for registration shall remit with his application the sum of \$5 as the annual registration fee if he resides within the boundaries of the State of Indiana; and if residing outside the boundaries of the State of Indiana, shall remit the sum of \$10 as the annual registration fee; Provided, that no registration or fee for registration shall be required of any holder of a certificate on or before the month of July of the year following the year within which such certificate was issued.

"Failure to comply with provisions of this Act shall operate automatically to cancel his/her certificate, and any license issued thereunder, and continued practice after cancellation of the certificate and license issued thereunder shall be considered as practicing without license. A certificate cancelled for failure to register may be reinstated by said Board upon submission of the applicant's last registration certificate together with current and delinquent fees, and a penalty in the sum of \$10."

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

DISEASES OF METABOLISM—Detailed Methods of Diagnosis and Treatment, A Text for the Practitioner—Edited by GARFIELD G. DUNCAN, M.D., Director of Medical Division, Pennsylvania Hospital; Clinical Professor of Medicine, Jefferson Medical College, Philadelphia, Pa. With contributions by Walter Bauer, Hugh R. Butt, Abraham Cantarow, Tracy Donald Cottle, Garfield George Duncan, Frank Alexander Evans, Ferdinand Fetter, Joseph Marchant Hayman, Jr., Martha A. Hunscher, Friedrich Klemperer, Cyril Norman Hugh Long, Perry MacNeal, Edward H. Mason, Max Miller, Louis H. Newburgh, John Punnell Peters, W. D. Robinson, Tom D. Spies, Leandro Maues Tocantins, Abraham White, Alexander W. Winkler. Second edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$12.

DISEASES OF THE CHEST WITH EMPHASIS ON X-RAY DIAGNOSIS—By Eli H. Rubin, M.D., F.A.C.P., F.C.C.P., Attending Physician, Division of Pulmonary Diseases, Montefiore Hospital and Country Sanatorium, New York; Visiting Physician in Tuberculosis and Physician-in-charge, Chest Clinic, Morrisania City Hospital, New York. The Principles of Surgical Treatment—by MORRIS RUBIN, B.A., M.D., Assistant Visiting Surgeon, Triboro Hospital and Morrisania City Hospital, New York; Formerly Chief, Thoracic Surgical Section, Sixty-Ninth General Hospital, Assam, India. W. B. Saunders Company, Philadelphia, 1947. Price, \$12.

GYNECOLOGY with a Section on FEMALE UROLOGY—By Lawrence R. Wharton, Ph.D., M.D., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Assistant Attending Gynecologist, The Johns Hopkins Hospital; Consultant in Gynecology, The Union Memorial Hospital, Hospital for the Women of Maryland, Sinai Hospital and Church Home and Infirmary. Second edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.

A MANUAL OF THE COMMON CONTAGIOUS DISEASES—By Philip Meen Stimson, A.B., M.D., Associate Professor of Clinical Pediatrics, Cornell University Medical College; Visiting Physician, Willard Parker Hospital; Director, Poliomyelitis Service, The Knickerbocker Hospital; Medical Director, The Floating Hospital of St. John's Guild; Associate Attending Pediatrician, The New York Hospital; Consulting Pediatrician, The Meadowbrook, Bergen Pines, and Norwegian Lutheran Hospitals. Fourth edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$4.

A MANUAL OF FRACTURES AND DISLOCATIONS—By Barbara Bartlett Stimson, A. B., M.D., Med. Sc.D., F.A.C.S.; Assistant Professor of Clinical Orthopedic Surgery, College of Physicians and Surgeons, Columbia University, New York City; Associate Attending Surgeon, Presbyterian Hospital and Vanderbilt Clinic, New York City.

Second edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$3.25.

NUTRITIONAL AND VITAMIN THERAPY IN GENERAL PRACTICE—By Edgar S. Gordon, M.D., Ph.D., Associate Professor of Medicine, University of Wisconsin. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.

OFFICE IMMUNOLOGY INCLUDING ALLERGY, A Guide for the General Practitioner—Edited by Marion B. Sulzberger, Professor of Clinical Dermatology and Syphilology and Director New York Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital; and RUDOLF L. BAER, M.D., Instructor in Dermatology and Syphilology, New York Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital. The Year Book Publishers, Inc., Chicago, 1947. Price, \$6.50.

REHABILITATION THROUGH BETTER NUTRITION—University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Alabama; by TOM D. SPIES, M.D., from the Department of Internal Medicine, University of Cincinnati College of Medicine. W. B. Saunders Company, Philadelphia, 1947. Price, \$4.

Rh—ITS RELATION TO CONGENITAL HEMOLYTIC DISEASE AND TO INTRAGROUP TRANSFUSION REACTIONS—By Edith L. Potter, M.D., Ph.D., Assistant Professor of Pathology, Department of Obstetrics and Gynecology, The University of Chicago and the Chicago Lying-in Hospital. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.50.

SURGICAL PATHOLOGY—By William Boyd, M.D., Dipl. Psychiat., M.R.C.P. Edin., F.R.C.P. Lond., LL.D. Sask., M.D., Oslo, F.R.S.C., Professor of Pathology, The University of Toronto. Sixth edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.

A TEXTBOOK OF PATHOLOGY—By E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis, Minn.; Contributors—B. J. Clawson, M.D., Professor of Pathology in the University of Minnesota, and J. S. McCartney, M.D., Associate Professor of Pathology in the University of Minnesota. Sixth edition. Lea & Febiger, Philadelphia, 1947. Price, \$10.

THE 1946 YEAR BOOK OF ENDOCRINOLOGY, METABOLISM AND NUTRITION—Endocrinology edited by WILLARD O. THOMPSON, M.D., Clinical Professor of Medicine, University of Illinois College of Medicine; Attending Physician (Senior Staff), Henrotin Hospital; Attending Physician, Grant Hospital of Chicago; Metabolism and Nutrition edited by TOM D. SPIES, M.D., Associate Professor of Medicine, University of Cincinnati School of Medicine; Director, Nutrition Clinic, Hillman Hospital, Birmingham, Alabama. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.

BOOK REVIEWS

REHABILITATION THROUGH BETTER NUTRITION

University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Alabama; by TOM D. SPIES, M.D., from the Department of Internal Medicine, University of Cincinnati College of Medicine. W. B. Saunders Company, Philadelphia, 1947. Price, \$4.

This excellent monograph of some eighty pages summates the author's experience in the diagnosis and treatment of deficiency diseases. Excellent photographs depict the various lesions. Case histories are presented to illustrate the different clinical entities.

The author emphasizes the fact that in nutritional failure, either primary or secondary, a complex clinical picture is presented and that usually no pure specific deficiency syndrome is apparent. A

detailed discussion is given of vitamin A deficiency, pellagra, beriberi, riboflavin deficiency, scurvy and a brief consideration of the anemias.

A properly balanced diet of approximately 4,000 calories is essential in treatment. A basic vitamin formula was added consisting of 10 mg. of thiamine, 50 mg. of niacinamide, 5 mg. of riboflavin and 75 mg. of ascorbic acid.

This is a splendid and authoritative contribution. The case histories and the excellent photographs make it a practical addition to the clinician's library.

D. H. K.

THE INTERNAL FIXATION OF FRACTURES

By Charles Scott Venable, M.D., F.A.C.S., Diplomate, American Board of Surgery; Member, Fracture Committee of the American College of Surgeons; American Academy of Orthopedic Surgeons; Southern Sur-

gical Association; American Association for the Surgery of Trauma; Texas Surgical Society; and WALTER GOODLOE STUCK, M.D., M.S. (Orth. Surg.), F.A.C.S., Diplomate, American Board of Orthopedic Surgery; Member, Fracture Committee of the American Academy of Orthopedic Surgeons; Southern Surgical Association; American Orthopedic Association, American Association for the Surgery of Trauma, Texas Surgical Society; with a Foreword by RALPH K. GHORMLEY, M.D., F.A.C.S., Professor, Orthopedic Surgery, Mayo Foundation; Consultant, Orthopedic Surgery, Mayo Clinic; Consultant, Orthopedic Surgery, Veterans Administration. Charles C. Thomas, Publisher, Springfield, Ill., 1947. Price, \$5.50.

This volume affords a definite contribution to the treatment of fractures. For the first time the history of the use of metal appliances is offered in a complete form. The importance of the composition of these metals is thoroughly discussed. All physicians dealing with treatment of fractures will find timely and detailed information regarding internal fixation. Complete bibliography and well chosen illustrations accompany the text.

E. M. G.

GYNECOLOGICAL AND OBSTETRICAL PATHOLOGY

With Clinical and Endocrine Relations

By Emil Novak, A.B., M.D., D.Sc. (Hon. Dublin) F. A. C. S., Associate in Gynecology, The Johns Hopkins Medical School; Gynecologist, Bon Secours and St. Agnes Hospitals, Baltimore; Fellow, American Gynecological Society, American Association of Obstetricians, Gynecologists and Abdominal Surgeons and Southern Surgical Association; Honorary Fellow, Societe Francaise de Gynecologie; The Royal Institute of Medicine, Budapest; Sociedad d'Obstetricia et Ginecologia de Buenos Aires; Central Association of Obstetricians and Gynecologists; Texas State Association of Obstetricians and Gynecologists; Past Chairman, Section on Gynecology and Obstetrics, American Medical Association. W. B. Saunders Company, Philadelphia, 1947. Price, \$7.50.

One may wonder what justification there may be for publication of a book limited to discussion of pathologic conditions encountered in the fields of obstetrics and gynecology. Is not this material amply covered in standard textbooks?

One will need only to rapidly thumb through Novak's work on *Gynecological and Obstetrical Pathology* and to glance at some of the numerous fine illustrations in order to realize that the field is a broad one. Many of the problems met by the

general practitioner and by various specialists in medicine are related to diseases of the female organs. A rather large percentage of operations performed by general surgeons are gynecologic in nature. Work in gynecologic pathology occupies a good deal of the time of the general pathologist in the ordinary hospital laboratory.

A sound knowledge of gynecologic pathology is, therefore, essential. Many pathologic states of similar nature may vary considerably from each other because of the roles played by pregnancy, by hormones, by the age of the patient, et cetera. Certain tumors of the ovary produce hormones which influence greatly the appearance of the endometrium. As a consequence, the author has found it necessary to add to this second edition of his book over one hundred new pictures, many in color, in order to adequately illustrate his textual material, bringing the total to five hundred forty-two. It is largely true that a textbook of pathology is only as good as is the quality of its illustrations. If this concept be correct, Novak's volume is outstanding.

This book is recommended to specialists and to general practitioners as well as to pathologists because it not only illustrates the basic principles of numerous diseases with which these men deal, but it also approaches problems from a clinician's point of view. It is not encyclopedic in scope, yet it is complete. It is easy to read. References are carefully selected, moderate in number, and up-to-date.

R. F. B.

POSTGRADUATE OBSTETRICS

By William F. Mengert, M.D., Professor and Chairman, Department of Obstetrics and Gynecology, Southwestern Medical College; Chairman, Obstetrics and Gynecology, Parkland Hospital, Dallas, Texas. Paul B. Hoeber, Inc., New York, 1947. Price, \$5.

In Postgraduate Obstetrics we have a well organized book, following the female patient from conception to the completion of the puerperium. True, it is written as the opinion of one man and there is very little time given to the discussion of the other side of the picture. On the whole it follows rather closely the principles of Williams and the teaching of Plass.

Starting with the minor ailments of pregnancy we are taken, by means of short discussions, through the disease complications of pregnancy and unrelated intercurrent diseases to the more severe and dangerous complications and the treatment of these varying conditions. The section on labor gives us the normal with adequate discussion of the complications of labor and operative procedures. Analgesia and anesthesia are given fair treatment as are the immediate postpartum complications. The puerperium discussion covers the postdelivery care of the mother and the child as well with suggestions for follow-up treatment. There is a short sensible section dealing with sterility and short outlines of laboratory and nursing technic.

L. K. S.

SOCIETY PROCEEDINGS

MEETINGS

Ida County

The Ida County Medical Society met in the office of Dr. J. B. Dressler of Ida Grove June 17. The 4-H health program was discussed and tentative plans were outlined. The group voted that effective July 3 all doctors' offices would be closed on Thursday afternoons.

Johnson County

Johnson County Medical Society members held their annual picnic June 4 at the home of Dr. George C. Albright.

Taylor County

The Taylor County Medical Society met June 9 at the home of Dr. and Mrs. C. E. Buckley in Blockton. After the business session, Dr. James Floyd Rimel read a paper on "Digitalis." At the close of the meeting Mrs. Buckley served refreshments.

PERSONALS

Dr. Lyle J. Bailey of Spokane, Wash., has opened offices for the practice of medicine in Arnolds Park. Dr. Bailey was graduated from the State University of Iowa College of Medicine in 1928 following which he practiced on the coast for seventeen years.

Dr. F. H. Clark of Clarinda has retired from active practice following forty-seven years of service to that community. He will continue his work at Municipal Hospital, however.

Dr. Stuart C. Cullen, associate professor of general surgery and chairman of the division of anesthesiology in the State University of Iowa College of Medicine, left June 23 for Europe where he will participate in a three month medical mission to Austria and Hungary. The ten person mission, composed of eight scientists and physicians from the United States and one each from Canada and Switzerland, will acquaint the medical college faculties in Austria and Hungary with advances in medicine elsewhere during World War II.

Dr. John P. Darling, who has spent the last eight years at the Mayo Clinic, Rochester, specializing in pathology, recently joined the Park Hospital Clinic, Mason City, as pathologist.

Dr. John DeMeulenaere opened offices for the practice of medicine in Grinnell July 25. A graduate of

the State University of Iowa College of Medicine, Dr. DeMeulenaere has been taking a postgraduate medical training course at St. Joseph's Mercy Hospital, Detroit, Mich. Prior to that he served five and one-half years in the United States Army.

Drs. W. E. Foley and G. E. Morrissey of Davenport have opened associated offices in the First National Bank Building. Dr. Morrissey is beginning his second year of practice in that city while Dr. Foley has been there a number of years.

Dr. Louis A. George has opened offices in Remsen following two years of service in the Army Medical Corps. He was graduated from the State University of Iowa in 1943, completed his general medical internship and a year's internship in surgical training before entering service.

Dr. Felix A. Hennessy of Calmar has been selected as Iowa's representative director to the National Tuberculosis Association. He is now serving his eleventh year as president of Winneshiek County Tuberculosis Association, and last year was elected first vice president of the Iowa Tuberculosis Association.

Dr. F. W. Kiesau of Postville was honored by the Kiwanis Club at a picnic supper July 9 for having completed fifty years of service in the practice of medicine, most of which have been in that community.

Dr. J. H. LaTona of Des Moines has set up offices for the practice of medicine in Shelby. He has been doing graduate work in Mercy Hospital, Des Moines.

Dr. J. F. Meany of Rockwell has announced his retirement from active practice and the sale of his home, office building and practice to Dr. E. F. Fleming who has been associated with him the past three months. Dr. Meany will be "on call" for consultation and will be available for surgery, however. He has been located in Cerro Gordo County since 1911.

Dr. Don F. Mirick has been appointed a member of the resident staff in the Department of Obstetrics and Gynecology at the University Hospitals, Iowa City. A former captain in the Army Medical Corps, Dr. Mirick returned from Germany on Apr. 12, 1947.

Dr. L. K. Reeck has established offices for the practice of medicine in Lytton. A graduate of the State University of Iowa College of Medicine in 1944,

Dr. Reeck served his internship in Iowa Methodist and Blank Memorial Hospitals, Des Moines; he also served as a medical office in the Schick General Hospital, Clinton, following which he was sent to Germany for one year.

Dr. Philip W. Sorenson recently began practice in Cedar Falls. Dr. Sorenson was graduated from the State University of Iowa College of Medicine in 1939 and took his internship at Northwestern Hospital, Minneapolis, Minn., spending one year as resident surgeon there. Following five years' service in the Army Medical Corps, he took a postgraduate course in medicine and surgery at the University of Minnesota.

Dr. J. K. Stepp, who retired from practice in Manchester in 1945, recently returned from Tulsa, Okla., where he has been resting. Dr. Stepp has leased the offices of the late Dr. J. A. May and will be available for surgery, consultation and office practice only.

Dr. Margaret R. Wendell, formerly located at Iowa State College, Ames, has been appointed college physician at Central College, Pella.

Dr. Lysle Whitmer, who has been practicing in Wilton Junction since his separation from the armed forces, has retired, temporarily at least, from active practice and moved to a farm near Bloomfield.

Dr. W. G. Wilkinson and Dr. R. D. Rowley, both graduates of the State University of Iowa College of Medicine and medical officers in World War II, recently opened offices for the practice of medicine in Bellevue. As was mentioned in an earlier issue, Dr. J. C. Dennison sold his equipment and practice to Dr. Wilkinson, who later took Dr. Rowley into partnership with him.

Dr. A. C. Wubbena and Dr. M. D. Enna purchased the VanderWilt Hospital in Rock Rapids recently and have renamed it the Rock Rapids Hospital. The building is being redecorated.

MARRIAGE ANNOUNCEMENTS

Dr. Howard Rudersdorf of Hawarden and Miss Mary Ann Donohue were united in marriage June 14 in Bonesteel, S. D. The ceremony was a double one, Miss Kay Donohue and Norman Maxon of Barrington, Ill., also being married at that time. Dr. and Mrs. Rudersdorf are at home in Hawarden where he is associated with Dr. F. F. Null in medical practice.

DEATH NOTICES

Brown, Samuel Joseph, of Panora, aged 75, died July 5 in his home, apparently from a heart attack. Dr. Brown, who had practiced in that community for forty-eight years, was graduated from Rush Medical College in 1898. He was a life member of the Dal-

las-Guthrie and Iowa State Medical Societies at the time of his death.

Hancock, John Clifford, aged 75, of Dubuque died at his home June 18 following an extended illness. A graduate of the Harvard Medical School, Boston, with the class of 1898, Dr. Hancock retired in 1945 after forty-six years of service. He was a life member of the Dubuque County and Iowa State Medical Societies.

Jinderlee, Joseph Wencel, aged 73, died at his home in Cresco June 13. He had been ill several months. Dr. Jinderlee was graduated from the Keokuk Medical College, College of Physicians and Surgeons, in 1903 and practiced in Cresco from that time on, with the exception of short periods devoted to postgraduate study. He was a member of the Howard County and Iowa State Medical Societies.

McConnaughey, James Terry, of Mount Pleasant, aged 71, died at Memorial Hospital in that city June 17. A graduate of the Keokuk Medical College, College of Physicians and Surgeons, Dr. McConnaughey was a life member of the Henry County and Iowa State Medical Societies.

Rohner, Frank James, aged 64, of Iowa City died July 1 following a lingering illness. He was graduated from the State University of Iowa College of Medicine, Iowa City, with the class of 1912 and was associated with the University until he entered private practice in 1927. Dr. Rohner was a life member of the Johnson County and Iowa State Medical Societies.

Stafford, James Frederick, aged 66, of Lovilia died July 5 after an illness of several years' duration. He was graduated from the Jefferson Medical College of Philadelphia with the class of 1906, practicing in Avoca and Schaller until 1909 at which time he located in Lovilia. Dr. Stafford was a member of the Monroe County and Iowa State Medical Societies.

Thompson, Harry French, of Forest City, aged 77, died June 17 of coronary thrombosis at the Forest City Hospital after several months of failing health. After graduating from Rush Medical College in 1894, he practiced in Goodell, Rock Rapids, and Buffalo Center before establishing his practice in his last location in 1907. Dr. Thompson was a member of the Hancock-Winnebagos and Iowa State Medical Societies.

Van Winkle, Howard L., aged 65, of Cedar Rapids, died June 22 at his home following a long illness. Dr. Van Winkle was graduated from the Long Island College of Medicine, Brooklyn, in 1907, and had practiced in Cedar Rapids since 1920. He was a past president and member of the Linn County Medical Society and a member of the Iowa State Medical Society.

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PRINCIPALS OF DIGITALIS THERAPY AND COMMENTS ON VARIOUS PREPARATIONS AND METHODS OF ADMINISTRATION

Joseph B. Vander Veer, M.D., Philadelphia, Pa.

The Choice and Method of Administration of Digitalis Glycoside Preparations

The principles of digitalis therapy are well known to most physicians and have changed very little over the years. The practice of medicine does change, however, and new cardioactive drugs and preparations appear, and old truths must be retold. The statement of the famed Viennese physician, Wenckebach, is still apropos. "Digitalis treatment is one of the most important and serious duties of the general physician; it demands a great deal of skill, power of observation, keen interest and experience; a long life is too short to learn enough about this wonderful drug."

The average physician treating patients with cardiac failure is confronted with the problem of what cardioactive preparation to use and what method of administration to follow. He is aware that numerous articles report excellent results with various preparations of cardioactive glycosides. The pharmaceutical houses extol the virtues of their respective products and offer new and simplified methods for digitalizing patients. He wonders if all he has learned in the past from study and experience has been wasted and what course he should follow in the future.

Despite the confusion that exists and granted that the last word has not been spoken, the status of digitalis therapy is steadily improving. The isolation of the various cardioactive glycosides from digitalis and other plants has been a great step forward. The knowledge gained in the study of these products on animals and man has had a beneficial effect on digitalis therapy in general. The many preparations now available for clinical use are well standardized, reliable and effective

when used correctly. (The terms "digitalis" and "digitalis therapy" will be used in the broad sense to denote digitalis and all types of cardioactive glycosides.)

Indications and Contraindications

The indications and contraindications for digitalis therapy as well as the beneficial and toxic effects of the drug are too well known to warrant a detailed discussion. There are many facts of great practical importance, however, that need re-emphasis. Many are very old, having been known to Withering. Luten has included many of these under the term of "Therapeutic Theses" in his excellent book on digitalis.

"There are few if any situations in which digitalis is known to be of value *except heart failure*. In almost all other situations it is of no value; in many, it is harmful."

Digitalis is of value in the treatment of heart failure no matter what the heart rate may be, rapid or slow. Digitalis is of value in the earlier phases of heart failure; shortness of breath, cough, nocturnal dyspnea and râles at the bases are benefited and indicate its use, as well as congestive failure.

High blood pressure, low blood pressure, angina pectoris and chronic valvular disease are neither *indications* nor *contraindications* for digitalis therapy. If failure is present the drug will usually help.

Tachycardia per se is not an indication for digitalis therapy. Toxic states, pneumonia, fever, septicemia, shock, hyperthyroidism and other similar conditions do not call for the drug. It may do harm in such conditions.

"The increase in output from the action of digitalis in the failing heart is effected without increase in work. Digitalis lessens the energy requirement of the failing myocardium; it does not force it to work harder, but enables it to work better."

The most spectacular effects of digitalis therapy are seen in patients with auricular fibrillation with rapid ventricular rates and heart failure.

There are many factors which influence the

digitalizing dose for a given patient. The age of the patient is important, older individuals taking relatively less of the drug. The weight of the patient is of much less value than was once thought and is of little practical value. The degree of failure may be a factor and the amount of cardiac damage is also important. Patients who are developing congestive failure or who have considerable accumulations of fluid and edema may take larger than average amounts of digitalis before improvement occurs.

The more severely damaged the heart, the less the margin of safety between therapeutic and toxic doses. "Certain patients with heart failure cannot be benefited by digitalis administration" (toxic effects appear before beneficial effects). Toxic effects of digitalis may appear after a large diuresis has occurred. They are the result of mobilizing edema fluid in which digitalis bodies have been retained.

The most serious toxic effects are disturbances in cardiac rhythm. Ventricular premature contractions and coupling of premature beats are frequent, auriculoventricular heart block, auricular fibrillation and ventricular tachycardia are less frequent but more serious manifestations. Ventricular fibrillation may occur from digitalis toxicity. Any of these toxic manifestations may, and frequently do, occur *without* nausea or vomiting.

The various cardioactive glycoside preparations are additive and cumulative and are not logically used together. When toxic effects appear with one preparation, other preparations will seldom prove beneficial to the patient.

Cardioactive drugs must be used with great care in patients who have recently been digitalized or who have had unknown amounts of digitalis.

The Cardioactive Glycosides

It is of interest that the many cardioactive glycosides which have been isolated are all from plant sources. They occur in a variety of flora and are found in different parts of the various plants. Table 1 lists the sources of a number of these glycosides. The medicinal value of several of these has been known for centuries. Those

products derived from *digitalis purpurea*, *digitalis lanata*, *strophanthus* and *squill* are the best known. Table 2 lists a number of the preparations in common use which are obtained from these plants.

TABLE 2.—ORIGIN OF COMMONLY USED PREPARATIONS*

<i>Digitalis purpurea</i>	<i>Digitalis lanata</i>
Digitalis leaves	Digilanid
(a) Tablets, capsules	Cedilanid (Lanatoside C)
or pills	Digoxin
(b) Tincture	<i>Squill</i>
Digitan	Scillaren
Digalen	Urginin
Digifolin	
Digitoxin	<i>Strophanthus</i>
(a) Digitaline nativele	Ouabain (G)
(b) Purodiglin	Strophanthin K
(c) Crystodigin	
Gitalin	

*No attempt has been made to include all preparations which are available.

The qualitative action of these various glycosides seems to be identical. Quantitatively, however, there is considerable difference in their action. As pointed out by Gold, the quantitative differences are primarily in the following: speed of action, duration of action, extent of absorption and potency. It is important to understand all of these factors in order to appreciate the great variation in dosage which exists between the different glycosides when given orally. Thus, *strophanthus* preparations are so poorly absorbed that they are ineffective when given orally, while the most potent of the digitalis glycosides, digitoxin, is so completely absorbed from the gastro-intestinal tract that the oral and parenteral dosage is essentially the same. Between these two extremes lie the other cardioactive glycosides, in extent of absorption. There is probably less variation in speed of action than was formerly supposed if the preparations are used in equivalent dosage. However, the *strophanthus* preparations probably act slightly more rapidly than the other glycosides when given intravenously. The duration of action is again a most variable thing, with *strophanthus* being the most transient (two or three days), while digitoxin (and whole leaf digitalis) show effects for as long as three weeks in some patients.

The determination of potency and standardization of the various glycosides was first done by bio-assay on animals. It was soon learned, however, that the actual dosage for man could be determined only by clinical trial of the glycosides on humans. This was based on the great variation in absorbability from the intestinal tract. As Sir Thomas Lewis said, "The proof or disproof of a drug's efficacy rests finally on the test in patients." Evidence has been gradually accumulating over the past two decades as to the potency and oral dosage of these glycosides. At present

TABLE 1.—ORIGIN OF CARDIOACTIVE GLYCOSIDES

<i>Digitalis</i> (Leaves)	<i>Squill</i> (Bulb)
A. <i>Digitalis purpurea</i>	Scillaren A
1. Digitoxin	Scillaren B
2. Gitoxin	
3. Gitalin	<i>Strophanthus</i> (Seed)
B. <i>Digitalis lanata</i>	Ouabain (gratus)
1. Digilanid A	Strophanthin K (kombe)
2. Digilanid B	
3. Digilanid C	<i>Thevetia neriifolia</i> (Nut)
	Thevetin
<i>Oleander</i>	<i>Periploca graeca</i> (Bark)
Oleandrin	Periplocin
<i>Lily of the Valley</i> (Flower)	
Convallamarin	

many of the glycosides which are isolated in pure form can be assayed entirely by weight, bio-assay being unnecessary. This is obviously a great step forward. The cat unit dosage of the various glycosides and of digitalis itself is of academic interest, but for determination of the comparative oral dosage in man it is useless and misleading, and has added considerably to the confusion in dosage of the various drugs. Thus 1 mg. of ouabain is equivalent to 10 cat units, and 1 mg. of digitoxin is about 3 cat units, whereas 100 mg. of digitalis leaves equals only 1 cat unit.

The qualitative action of the various cardioactive glycosides, as mentioned, seems to be identical and similar to that of whole leaf digitalis when given in adequate dosage. The most important and primary effect is a direct effect on the cardiac muscle fibers. There is increased force of systolic contraction with the ventricle emptying more completely, a shortening of systole and an increased filling time. The mechanical efficiency of the heart is increased with an increase in cardiac output and a decrease in the size of the heart in diastole. Reduction of venous pressure is probably accompanied by an increased coronary flow. Secondary slowing of the heart usually occurs. A less important action of the cardioactive glycosides is the effect on the cardiac rate as the result of their action on the conduction system. With therapeutic doses there is little or no direct effect on the pacemaker of the heart. Conduction in the auriculo-ventricular bundle is affected by decreasing the rate of conduction and increasing the refractory period. Reflex vagal effect is much less important than was once believed. These latter are effective mainly in slowing the ventricle in auricular fibrillation.

Choice of Preparations

It is well established that the action of all of the cardioactive glucosides is qualitatively similar no matter what their origin. If this is true, there is no real advantage of one over the other in so far as real action on the failing heart is concerned. It may be an advantage, of course, at times, to use a preparation which acts more quickly due to more rapid absorption. The variation in duration of action as the result of more rapid elimination or destruction of the glycoside might occasionally have some bearing on the individual problem. However, prolonged action is desired in practically every cardiac patient and severe toxic effects can usually be avoided, so that rapid elimination of the glycoside is probably of questionable importance. The most rapidly eliminated glycosides, the strophanthins, cannot be given orally, and their action is so transient (two to three days)

that they are of no value for routine use. In a clinical study extending over several years, Stroud, Vander Veer and others followed a considerable group of patients with cardiac failure. The failures were of varied etiology, but most of the patients had rheumatic heart disease and auricular fibrillation. They were maintained for periods of about a year each on digitalis leaves, a preparation containing all of the glycosides of digitalis purpurea, digitoxin, gitalin, digoxin and a squill glycoside preparation. Digitalizing doses and relative maintenance doses were determined clinically. There was no essential difference in results with the various preparations if they were used in adequate dosage. None was less toxic or more effective than the others. In several patients with severely damaged hearts in whom toxic effects (usually coupling of premature beats) appeared before adequate clinical improvement was manifest, the same toxic symptoms resulted with the use of other glycosides. It was the opinion of the authors that whole leaf digitalis was as satisfactory as any of the glycosides preparations and probably the drug of choice for routine use.

A change from one preparation to another is occasionally desirable for various reasons. If patients have experienced toxic effects, especially nausea and vomiting, on one preparation they may refuse to continue the drug. In such cases, switching to another product of different appearance may be helpful. It should be remembered that the new drug should be continued in maintenance dosage only, if the patient is digitalized. The difference in rapidity of absorption of the various glycosides is so slight as to be of doubtful clinical significance when given orally.

With the recent work of Gold and his associates, demonstrating the complete absorption of digitoxin when given orally and the possibility of digitalizing a patient with a single oral dose of this drug, there has been a great campaign by the pharmaceutical companies to popularize this glycoside and the one-dose method of digitalization. In a considerable experience with this drug over a decade ago, and in recent studies on well controlled patients with cardiac failure, I have found preparations of this glycoside much less "fool-proof" than would be gathered from the articles in the literature or the advertisements in the current medical journals. It is certainly one of the most important of the cardioactive glycosides and the work of Gold and his collaborators has been an excellent contribution to our knowledge of digitalis and digitalis therapy. It is true that the advocated dose of 1.2 mg. of digitoxin can usually be tolerated and is usually a safe dose if the patient has received no other digitalis prep-

aration, but this does not necessarily prove that it is a wise procedure for routine use in digitalizing patients. If anything, it is too simplified. There is no substitute for a thorough knowledge of the action of digitalis preparations including beneficial and toxic effects, and experience with their use in treating patients. It is very likely that toxic effects and failures with digitoxin will be as frequent as with other preparations in the hands of the inexperienced. The advocated maintenance dose of digitoxin (0.2 mg.) is slightly larger than is well tolerated by the average patient. It is true that some patients who are shifted from a maintenance dose of 0.1 gm. (1½ grains) of standardized digitalis leaves to 0.2 mg. of digitoxin are improved. This is due to giving more of the active glycoside and the same result will be obtained in this type of patient, in whom an insufficient maintenance dose was being given, by increasing the dose of digitalis.

The choice of preparation for emergency use is not a difficult one. The method of administration and the dosage employed are of more importance than the actual preparation employed. It is more important to know thoroughly the action and the dosage of one or two preparations than to have a smattering of knowledge of a number of them. It is believed that intravenous use is always desirable when feasible, and it is seldom that this cannot be accomplished. When this is impossible, intramuscular use should be resorted to, but never subcutaneous administration.

Strophanthus preparations are frequently advocated for emergency cardiac use. They are potent drugs, but it is doubtful if they act significantly faster than some of the digitalis glycosides and they have the disadvantage of losing their potency with time (a factor in a drug used infrequently). Their short duration of action may be a disadvantage as well as an advantage when they are combined with other preparations that must be utilized to control the patient.

The digitalis glycosides, when used separately or in combination in the "purified" tinctures, are effective and rapid in action if used intravenously. Digoxin, cedilanid (lanatosid C), the squill preparations and the various glycoside combinations (digalen, digifolin, digilanid, etc.) are all satisfactory preparations when used in correct dosage. It must be stressed that the dosage of the many preparations *varies greatly*, and that the dosage for the individual product he is using for emergencies must be known by the physician.

Method of Administration

Despite the great tendency today to give medications by parenteral routes and notwithstanding

the large number of glycoside preparations which can be given by these routes, the fact remains that 95 per cent of patients are best treated by oral medication. I feel that parenteral use of these drugs should be limited to real cardiac emergencies or the rare case in which medication cannot be given by the gastro-intestinal route. Subcutaneous use is never indicated and the intramuscular route is often unreliable. As a group, these preparations are irritating and poorly absorbed, and with a failing circulation such medication must be given intravenously if a favorable result is to be expected.

There has been a great deal of abuse in the subcutaneous and intramuscular use of small doses of glycoside preparations, especially "purified" digitalis tinctures. It has been nearly a routine on many hospital services, both medical and surgical, to give such preparations to patients in circulatory collapse, shock and toxemias, and to moribund patients. This type of "medical last rites" must be eliminated with the more intelligent management of shock, circulatory failure, disturbed fluid balance, anoxemia and similar conditions. In the words of Luten, "Under the highest standards of practice the absence of an indication must be regarded as a contraindication."

There are occasional patients in whom the parenteral use of a glycoside preparation may be a lifesaving measure. While such patients are not frequent, it is well to recognize the indications for such therapy and to be familiar with one or two preparations suitable for such administration. One of the primary indications for intravenous therapy with cardioactive glycosides is *pulmonary* edema due to acute left ventricular failure. Other methods of treatment (morphia, oxygen, diuretics, and so forth) should be utilized and morphine in full doses is probably the most valuable single measure. Oxygen is frequently not available immediately, and intravenous digitalis therapy should be considered. It may be combined with aminophylline and even a mercurial diuretic may be added. Auricular fibrillation with rapid ventricular rate and severe cardiac failure may be an indication for such therapy and occasionally patients with normal sinus rhythm and extreme failure are desirable candidates, especially if vomiting is present from a congested liver and gastro-intestinal tract. It should be stressed that such patients are infrequent but they are seen in the admitting wards of city hospitals and occasionally in general practice, under unusual circumstances. If death appears imminent (within two to three hours) it seems logical that only medicine given by the intravenous route could be effective.

Dosage of Digitalis Preparations

Stated briefly, the dose of digitalis or any of the cardioactive glycosides is *enough* and *not too much*. This fact was well known to Withering and was stressed in his classic, "An Account of the Foxglove" (1785). The actual approximate digitalizing and maintenance doses of the many cardioactive preparations has been determined entirely by clinical trial on patients. By the same token, the actual digitalizing dose and maintenance dose for any one patient must be determined individually. There is no relation of the "cat unit" dose of any one of these preparations to the others when given orally, because of the great variation in absorbability from the gastro-intestinal tract. For this reason the approximate digitalizing dose of a given preparation must be *known* to the physician. There are no shortcuts to good digitalis therapy.

The approximate oral digitalizing dose for digitalis leaves and the various glycoside preparations is known. For digitalis this is from 1 to 2 gm. (15 to 30 grains) depending on the individual patient and how rapidly the medication is given. In the average case the full dose can be safely given in forty-eight to seventy-two hours when the patient is under fairly close observation. The more severely ill the patient, the more closely he must be observed. In these patients, rapid digitalization is often desirable, so toxic effects must be carefully watched for. For the average patient a practical plan is as follows: An initial dose of 0.4 gm. (6 grains) is given followed by 0.2 gm. (3 grains) three times daily, or every six hours. When the dose reaches the neighborhood of 1.2 gm. (18 grains) the dose is cut to 0.1 gm. (1½ grains) three times daily. At the sign of improvement the medication is reduced to 0.1 gm. daily. When toxic signs or symptoms precede beneficial effects, the medicine must be stopped at once.

The most frequent maintenance dose of digitalis leaves is 0.1 gm. daily, approximately 60 per cent of patients being maintained on this amount. However, more or less than this amount is frequently desirable. The *optimum* maintenance dose must be determined by trial on the individual patient. It is not the average maintenance dose. Neither is it necessarily the maximum amount tolerated or the minimum effective dose. Thus a patient may be more comfortable and better controlled on six or eight tablets per week than on seven. A simple plan to accomplish this is to omit the Sunday dose or to give a double dose on Sunday. The use of two tablets one day and one the following day, alternately, is often a satisfactory method in those needing dosage well above 0.1 gm. per day. Occasional patients will tolerate

as much as 0.2 gm. per day, but this is seldom an optimum dose. Digitalis tincture is not recommended for routine use. It is less stable than the leaves, but more important, the dosage is less accurate and there is a tendency on the part of many patients to "adjust" the dose to suit their symptoms.

The digitalizing dose for the various preparations is usually presented in the literature accompanying these products and a plan similar to that outlined can be followed for any of the glycosides. A useful plan for digitalizing patients who are borderline cases—the so-called "therapeutic trial" case, is to put the patient on 0.1 gm. of digitalis, or similar dose of a glycoside preparation, three times daily for a week. This type of patient can be safely allowed to go this length of time without observation as he is not apt to develop severe toxic manifestations. At the end of this time if the patient is definitely improved he can be placed on a maintenance dose.

The single dose method of digitalization with digitoxin, as advocated by Gold and collaborators, has already been discussed briefly. It is probably a safe method for most patients, but in those seriously ill it is apt to be unsatisfactory. I have seen several instances of poor results under this regimen. They were not the fault of the glycoside, but resulted from following the "method" rather than following the patient. It is difficult to improve upon the principle of frequently repeated small doses with careful observation of their effects on the sick patient, continuing the drug until beneficial or minor toxic effects are evident. Remember, the more seriously damaged the heart, the more the patient needs digitalis, but the less the margin of safety between beneficial and toxic effects.

In cardiac emergencies, the intravenous use of a cardioactive glycoside preparation is recommended. Ouabin, strophanthin K, cedilanid, digoxin and the "purified" tinctures (digalen, digilanid) will give equally good results if given in adequate dosage and will produce toxic effects if given in overdosage or to those who have been receiving digitalis. In our experience there is no significant advantage of one preparation over another if they are given intravenously in equivalent dosage. The possible exception is digitoxin which apparently acts more slowly than the other glycosides, and has seldom been advocated for emergency use. We have seldom used strophanthus preparations for the reasons previously given in this article. The important thing for the average physician is to know the dosage of one or two reliable preparations and to have them available for immediate use if the emergency arises.

In a busy receiving ward and associated cardiac ward service, we have found the intravenous use of a purified tincture containing all of the glycosides of digitalis (digalen) very satisfactory in emergency cases which are undoubtedly cardiac, in which it is certain that no digitalis has been taken prior to admission. An initial dose of 4 cat units is given very slowly (undiluted) intravenously. This may be repeated in one to two hours if the patient is not improved. More often a second dose of 2 cat units is given in three to four hours. Digitalis is started orally as soon as the patient can take it. A total dose of 8 to 12 cat units is occasionally given intravenously in divided doses, over a few hours.

Digoxin and cedilanid are both very effective given intravenously. A total dose of about 1 mg. of either can be given over a few hours, giving about half the dose initially and judging the subsequent doses by the response of the patient.

It should be stressed again that cardiac emergencies requiring intravenous glycoside therapy are infrequent and that other measures known to be of value (oxygen, diuretics, morphine, venesection, tourniquets on the extremities, etc.) should be utilized in this type of patient.

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PSYCHOSOMATIC MEDICINE: GENERAL CONSIDERATIONS

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During the past five years there has been an increasing number of articles in all kinds of medical periodicals dealing with psychosomatic medicine. Psychiatrists have not been alone in contributions to this subject, and many physicians interested in internal medicine and the various medical specialties have offered their own con-

tributions. Unquestionably, the last world war gave considerable impetus to the concept of psychosomatic medicine, but as yet the concepts outlined have been confused, have considerable variance in theory and practice, but have nevertheless attempted to stir physicians to make new and more specific investigations. I have some objections to the term "psychosomatic medicine" because the words themselves introduce a dualism that does not exist and gives the total impression that something new has been added to our old conceptions of medicine. Actually, medicine should be regarded as psychosomatic in a broad implication of the term, which needs to be specifically qualified, as there are psychologic factors in all diseases that are given consideration by physicians whether they recognize these factors specifically or not.

Some of the difficulties that have been apparent in reviewing the many articles on this subject point to many misconceptions in definition, specificity of mechanisms, attempts at classification, and relationships to personality structure. In psychosomatic medicine one is constantly dealing with the inter-relationship between psychologic and organic factors. Therefore, it is inevitable that one's views on the subject will be to a considerable extent influenced and determined by the ideas that one holds about the psychologic nature and structure of human beings, including those within the so-called normal range and the pathologic extremes. Since most of us share a common ground concerning most of our conceptions of organic disease, the evaluation of organic factors will therefore not be a point of major contention. However, in dealing with intangible factors which are so commonly encountered in the evaluation of psychologic problems, wide differences of opinion are bound to occur. It is therefore indispensable to attempt an agreement on a basic psychologic point of view before we can approach the problems in the psychosomatic field.

By definition, psychosomatic medicine is the application of modern psychodynamic principles to the theory and practice of medicine. This application must be done to prevent the recurrence of mistakes in the past. The field of medicine has always been clouded with superstitious and magical beliefs, animistic theories, and many observations have been surprisingly correct and have led to the formulation of hypotheses. Modern psychodynamic psychiatry suggests that we can agree upon two general principles in dealing with human psychology: that human beings are in the last analysis motivated by biologic drives and instinctual strivings and that human behavior is psychologically characterized as goal-directed be-

havior. The direction of goals in people is modified in some degree by the social culture and more specific environmental factors. Clinicians are often baffled by the peculiar, devious and obscure mechanisms by which these biologic strivings are gratified, and the relationship between the instinctual motivation and the ultimate goal-directed pattern of human behavior may also be confusing. At any rate, these two general principles must be accepted and applied if we are to understand the driving forces and idiosyncrasies of the individual's activity on the one hand, and its flexibility and adaptiveness to the reality of his environment on the other. If we try to survey the opposing demands inflicted upon human existence by instinctual needs and drives, and the external pressure of environmental realities, it will not be difficult to assume that psychologic disturbance is one based upon a conflict between these opposing factors in the psychic structure.

In nearly all discussions of psychosomatic medicine there is always the argument about the relationship between mind and body, both from a qualitative and quantitative standpoint. The more that is known about the problem, the more evident it is that important questions of philosophy and metapsychology become involved in the body-mind question, and that ultimately elaborations of these questions will become more closely related to the problems of medicine. It is taken for granted that all of us are attempting to understand the human being as a total unit, and that mind and body really represent an essential unity in which they are the same thing viewed from different aspects. Nevertheless, psychology and physiology represent two different areas that have to be organized and unified within themselves. If we again reconsider our basic principle of psychodynamics, we will see that the impulse-motivated, goal-directed human being behaves in such a way as to make psychic and physical phenomena understandable. With this conception in mind we will see that psychosomatic medicine is really the beginning, though inadequately explored subject, of an even broader and more general inter-relationship of psyche and soma.

If we are to apply our definition of psychosomatic medicine more specifically, we would say that it deals with specific relationships between the dynamic psychologic structure and certain organic disease processes within the individual. However, psychosomatic processes represent more general application and may be subdivided into both normal and pathologic groups, just as disease may be considered pathophysiology. It is not the purpose of this paper to present the minute details and specific mechanisms of psychoso-

matic physiology, but rather to present a general theory of psychosomatic physiology and pathology and then a discussion of some of the disease syndromes which are considered to be psychosomatic in origin and the possibility of specific mechanisms involved.

The psychosomatic diseases are considered to be "emotional" in origin. Many physicians and laymen are often confused by the frequent synonymous use of the terms "psychogenic" and "emotional." Mr. Dunbar's classic work of psychosomatic knowledge is called "emotions and bodily changes." This interchange of the concepts "emotional" and "psychogenic" is apparently based upon the fact that human beings experience an obvious interaction of psychic and somatic events when an "emotion" is felt. The bond between conscious emotional experience, certain thought processes, and emotional expressions in bodily changes is one of the most vivid experiences a human being can have. In emotions psychologic and somatic phenomena are concomitant. This fact does not justify the interchange of the concepts "emotional" and "psychogenic," but it does have a validity in the explanation of the relationship of psychologic conflict and psychosomatic disease in general.

It may be helpful to pause for a moment and think of the operations of an emotion in the sense outlined, and how it can produce a temporary functional disturbance of the viscera. This is most clearly demonstrated in the incidents of everyday life. A man, while eating a meal, may be angered by a disturbing telephone call, the reading of an item in a newspaper, or by hearing a recitation of a mishap by his wife. Such anger immediately changes his attitude toward his meal with possibly symptoms of anorexia, nausea, abdominal distress or diarrhea. Changes take place in the man's stomach which disturb the rhythmic churning of the food. Since any one of the three incidents which precipitated the anger are disproportionately felt, it must be assumed that there is a hidden unconscious link between the incident and the feeling, lending this extraordinary significance to the event and the implicit unconscious process.

There are three avenues of discharge of nervous tension in the human being, and these same avenues of discharge play a rôle in emotions, namely, through central or psychic, somatic, and visceral pathways. It is obvious that the quantity of nervous energy or tension which will have to be discharged in any one or more of these three channels is increased if one or two of the other channels is blocked. Or there may be various combinations of these three avenues of discharge. If we pause and think of common emotional experiences, these

facts will be evident. The angry individual who fights his tormentor, or the agitated, grief-stricken individual who paces the floor, are vivid examples of the forceful attempt to drain off some of the nervous energy through somatic channels, chiefly by means of the muscular system. The individual paralyzed with fear is the one in whom the situation has blocked off all somatic expression so that the energy can be discharged only in agonizing anxiety. These examples have only dealt with the interchanges of the central and the somatic processes. With the autonomic processes we are much less familiar, but we do know that when we do feel an emotion centrally and are unable to express it somatically, something takes place within us viscerally which makes us feel as though we will "burst" or "sink down," and this feeling we recognize to be a visceral storm mediated through the autonomic nervous system.

Kubie, in a recent periodical, made an earnest and helpful classification of disorders from the psychosomatic standpoint. He pointed out that the two fundamental categories of psychosomatic relationship are susceptibility and somatization. He states "somatization is proposed as a general term for any process by which tensions which are generated on a level of psychologic experience are given some form of bodily representation and a partial discharge through anatomic and physiologic disturbances." Somatization may be purely sensory, purely motor, purely secretory or a combination of all. Kubie believes that somatization will fall into four major groups depending partly upon the structures involved and their psychologic and physiologic functions, and partly upon the particular aspect of the organ system which is involved. He felt that there were a series of steps in a continuous physiologic series in which the disturbed physiologic process became more and more dissociated from its original physiologic function, and at the same time from any conscious thought processes. Here again we see that "all psychosomatic phenomena are produced by the play of opposing forces; human needs and impulses struggling either against external obstacles or danger, or against internal inhibiting mechanisms such as guilt and anxiety."

Kubie divides somatization into: (1) The organs of external relationship, comprising the special sense organs, the striated muscles, the organs of speech and their central control, and the central organizing functions of the brain. It is pointed out that in current psychiatric terms, "disorders in these functions are ordinarily classified as conversion hysterias." All of these organs occupy a clearly defined place in conscious thoughts. They are the objects of complex thought processes,

which in turn the organs themselves can symbolize. Yet these organs of external orientation are also served by smooth muscle, blood vessels, and local secretory glands. The motor components of these subsidiary structures are not under conscious voluntary control; and their sensory components are enteroseptors. These subsidiary components have varying degrees of conscious representation and play a relatively obscure rôle in the psychic processes which underly and accompany psychosomatic disturbances in this area. They may or may not be involved along with the structures which they serve. Where they are, they mark a transition both physiologically and psychologically between the external somatizations and the deeper somatizations which are:

(2) Organs of internal economy which "comprise a large group of internal somatizations, including disorders of the heart and blood vessels, of the respiratory organs, of the gastro-intestinal tract, of the liver, pancreas, thyroid, and other endocrine glands." Clinically, physiologically, psychologically, and from the point of view of psychiatric prognosis, this group presents problems which are distinct from the first. In the first place just because the interior of the body is mysteriously hidden, disturbances in these functions often give rise to extensive and fantastic psychologic elaborations. For this and other reasons, certain of them are found in a psychotic and pre-psychotic setting. Furthermore, because of the specific importance of the organs involved, and because of the interaction with glands of internal secretion, any interference in their proper function has far reaching and sometimes disastrous secondary effects on the body as a whole, whereas even the most serious disturbance of function in the organs of external relationship leaves the body as a whole unimpaired.

(3) The third group, the organs of instinctual function, involves the apertures of the body, the organs of intake and output for food, air, and excreta, the swallowing mechanisms of the mouth and throat, the appetite, and all genital functions. "Because all of these serve biologic needs and discharges directly, they constitute foci of special significance. They involve external relationships, but on an elemental and instinctual level. They also involve the internal vegetative functions of the body, but only secondarily. Thus this group is transitional, physiologically as well as anatomically, between the organs of external relationship and of internal economy. As examples of disturbances in this group we might mention the dyspareunias, vaginismus, frigidity, all disturbances in male potency, spermatorrhea, air hunger, over-ventilation, sphincter disturbances, retention,

constipation, anorexia nervosa, etc. In current psychiatric thinking, disorders focused on this group are usually linked with one of the other two groups."

(4) The fourth and last group, the body as a whole, includes "those patients in whom the physiological disturbances or feelings of disability focus on no special organs or areas of the body, but seem rather to involve the entire body, as though it constituted one vague and mystical unit. Here we find states of fatigue and general weakness, of diffuse hypochondriasis, or chronic invalidism, and of fretful neurasthenia.

"There are numerous overlapping areas in these four categories that make the problem of classification more complex. Disturbances which involve primarily the organs of one group occasionally have concomitant secondary involvement of other basic areas. At times there may be an alternation between one group of organs and another group."

Margolin, in a recent elaboration of Kubie's formulations, has given us some very workable concepts of psychosomatic processes and psychosomatic disease. Essentially, the psychosomatic process is a physiologic chain of events which may be temporary or a chronic alteration of normal physiologic function. Psychosomatic disease is regarded as a pathologic disturbance which involves changes in cellular structure and which may also be a temporary or chronic alteration. This concept implies that structural changes may be partly or completely reversible or progressively irreversible.

Margolin also believes that there are essentially four classes of psychosomatic function: (1) those bodily functions under voluntary control such as the special sense organs, the skeletal and muscular systems, etc.; (2) those involuntary bodily functions, involving chiefly the internal organs and the vegetative functions; (3) those functions in which both voluntary and involuntary bodily functions are combined; (4) psychic representations of organ function or cerebral centers for such. Of these four functions those psychosomatic processes and diseases including the combined voluntary and involuntary organ systems are by far the most important. In this category most psychosomatic disturbances and disease are encountered and include disorders of speech, respiration, swallowing, elimination, gastro-intestinal disturbances and the many disturbances of bodily orifices. It is because of the complexity of disturbances in this category that we have found the greatest difficulty in understanding. For the same reason specificity of mechanisms, the relations of these mech-

anisms to personality types, and therefore proper direction of treatment has led to much confusion, misunderstanding, and errors in classification. For the most part drugs have been directed mostly against the involuntary factors in these psychosomatic functions. Various kinds of psychotherapy have been directed against the voluntary factors, but there is still much disagreement and many unknown areas in treating the combined voluntary and involuntary functions.

One of the dangers of the term psychosomatic medicine is that it runs the risk inherent in all fashionable movements in medicine. One of these is that many things are called psychosomatic medicine or psychosomatic disease which really do not deserve to come under that heading. A great many of these things should really be called psychologic factors or problems in medicine. Perhaps we should discuss the psychologic problems or factors in order to better delineate the realm of psychosomatic medicine.

Let us first take the class of disease which was formerly considered to be wholly organic in origin. In general, physicians and patients are so biased in favor of finding organic bases for disease that once the organic factors are found in the disease process the question of "psychogenic" or "emotional" origin is usually dismissed. It is nevertheless being discovered that many diseases display a symptom complex which show a variable mixture of organic and psychologic factors. There is a strong temptation and a tendency to call these diseases psychosomatic, whereas in reality they are symptom complexes in which there is a mixture of psychologic and organic features without any necessary or specific relationships between the two. An example of such a disease is general paresis. If organic factors alone explain the symptoms of general paresis satisfactorily, why should it be that the psychiatric picture should exhibit so many individual variations? It has been established that these variations do not correspond with any known fluctuations in the site, degree, or duration of the organic pathology. It has been conclusively demonstrated that there exists important correlations between the preparetic personality and the psychiatric picture of the disease. Such findings can be explained only by looking upon the psychosis of general paresis as produced by some form of general psychologic insult coming about on an organic basis. Similar problems exist in the senile and arteriosclerotic psychoses. It has been impossible to correlate organic brain damage as a result of senile or vascular changes and the presence or absence of a psychosis. The important factors in the psychotic picture are prob-

ably psychologic and are a reaction to the insult of the senile or vascular changes. Other examples of such a problem are retrograde amnesia and fugue states following a head injury. It has been impossible to correlate the nature and degree of the injury and the clinical picture accompanying it, and whether or not retrograde amnesia or fugue states will develop. It has been erroneously assumed that since retrograde amnesia or fugue states are often associated with an organic trauma, that they must necessarily be explained in organic terms. It is quite likely that both of these phenomena are based upon psychologic modes of response in individuals who habitually repress unpleasant experiences in one way or another. This kind of a problem, however, is not primarily a psychosomatic one but is a disease picture in which the mixture of organic and psychologic factors need to be disentangled.

There are other examples of psychologic factors in medicine represented in a group of diseases in which the organic illness arises as a consequence of psychologic conflicts, but without any specific etiologic relationships between the two. All of us have seen examples of this problem in individuals who are faced with an insoluble conflict in their life situation from which he wishes to escape either by flight or combat, and often in an irrational and self-destructive way. To illustrate this point, it is a common experience to see individuals who, because of anxiety, rage, defiance or guilt about a situation, expose themselves, either consciously or unconsciously, to unnecessary personal and climatic hazards, resulting in the acquisition of an infectious disease. Still other examples are the numerous traumatic injuries sustained as a result of emotional conflict. This is what we mean by the familiar term "accident on purpose." For example, there is the angry cab driver who is furious with his boss and who, in his poorly controlled rage, refuses to stop or give ground at a street intersection and is thereby injured. Two recent observations of mine have a more specific rather than general purpose. A man who nursed grievances toward his employer because of preferential treatment to other employees felt depressed, anxious and unappreciated. He was unable to express his anger and disappointment in any direct way. He felt "weak and spineless" in handling his problem. Strangely enough, in spite of his usual cautious and regulation-obeying manner, he violated an obvious and elementary safety rule at his work, resulting in a fall in which he fractured two vertebrae. This was the first serious accident in his life, and his injury accomplished both spiteful purposes and gains

from his employer and many reassurances and special considerations from his fellow employees.

As Dr. Dunbar has described in her studies in fracture wards, there are types of personalities who habitually sustain minor and major injuries from so-called accidents. Investigations have shown that the accident is an habitual mode of reaction to frustrating and anxiety-laden situations. Recently a veteran revealed a history of repeated injuries of all sorts synchronous with difficult arguments with his tyrannical father. In other instances overwhelming sense of guilt seems to be an important motivating factor. A veteran who had had many frustrating experiences in the service was awaiting discharge when he came to grips with an intolerable conflict with his family, and suddenly became heavily alcoholic and revealed a psychotic-life psychiatric picture. On discharge from the hospital he appeared incapacitated for work and was given a large disability pension. Later when he returned to work he felt guilty and worthless and commented that he "did not consider himself totally disabled and was living off the fat of the land." While engaged in social drinking he became despondent, jumped from a window, and thereby sustained fractures to all extremities, as a sort of grim travesty of his emotional conflict.

Another important group of diseases in which we are concerned with the relationship between psychologic factors and organic problems, are those in which the psychologic disturbances arise as a result of the organic disease. As a matter of fact, there are many physicians and laymen who, opposing any interpretation of certain disease pictures as being etiologically related to psychologic conflicts, hold that this is the true explanation. There are large groups of psychologic problems that are in response to organic disease, but one sees wide variations in the psychologic reactions to the same organic disease or to minimal physical disabilities. Very commonly children who spend months in bed convalescing from infectious diseases such as typhoid fever, tuberculosis, osteomyelitis, rheumatic fever, etc., often develop personality difficulties as a result. In this regard, however, a specific relationship is lacking. The personality difficulties might arise in reaction to the prolonged convalescence and would appear in any disease requiring such a convalescence, irrespective of the nature of the organic disease itself. This type of problem is now becoming of increasing importance, because with the triumph over infections with modern chemotherapy, and the lengthening of the average life span, chronic degenerative diseases and their

concomitant psychologic components are assuming increasing importance.

There is another group of diseases in which psychosomatic processes play an important rôle; these processes are not concerned with the basic etiology, which is primarily organic. As an example I would like to mention a young veteran with rheumatic heart disease whose cardiac reserve adequately compensated for moderate physical exertion. He suffered from transient episodes of cardiac decompensation as a result of the increased cardiac work brought about by emotional disturbances with the corresponding autonomic changes. Episodes of auricular fibrillation were precipitated both by disturbing anxiety dreams and during his wakeful hours by sexual preoccupation. It was found that psychothreapeutic efforts to relieve his anxiety often dramatically restored regular cardiac rhythm. We will recall that it was stated by John Hunter, who suffered from angina pectoris, that he was at the mercy of any rascal who chose to enrage him. It is observed also that attacks of paroxysmal nocturnal dyspnea are frequently precipitated by disturbing dreams. It is apparent that in this type of psychosomatic disturbance, there is a disregard of the ordinary organic etiologic lines of disease, with a grouping according to symptom complexes rather than basic organic causes. As an example, in psychosomatic processes leading to increased and labored respiration, there are closer relationships between cases of asthma and the symptoms of nocturnal dyspnea than between two cases of cardiac disease of a hypertensive and rheumatic basis respectively. In such problems, the psychosomatic pathologic physiology is more conspicuous than the psychosomatic disease in the sense of clinical entities.

I have described certain psychologic situations which are consciously meaningful, whereby, through the mediation of an emotional discharge through the autonomic nervous system there take place temporary functional changes in the viscera. In order to delimit our concept of psychosomatic disease we are going to have to modify the conscious, temporary and functional terms into the opposite; conscious to unconscious, temporary to chronic, and functional to structural.

It is not difficult to make the transition from the functional to the structural. It was formerly thought that functional changes arose as a result of disease structure, but it is now apparent that an entirely different class of diseases result in structural changes brought about by long continued functional derangement. As an example of this problem consider the so-called, essential hypertension with its original labile vasospastic

stage and the chronically progressive fixed stage with arteriosclerosis and all the well known cardiovascular-renal disturbances.

The transition from temporary to chronic, which results in functional disturbances becoming structuralized, must be reconciled. We know of people who chronically exhibit the signs of rage and fear in all degrees from severe storms to relatively unnoticeable phenomena. If we assume that psychosomatic diseases must be related to basic conflicts in the personality of the individual, it must be clear that these conflicts chronically operate and that concomitantly there must be chronically existing autonomic discharge of an abnormal character.

The transition from conscious to unconscious mental processes is much more difficult to make clear. In reality it is impossible to present in this discussion infallible evidence for the transition, because the evidence for it lies in the fundamentals of psychopathology. Modern dynamic psychiatry holds that the conscious worries and anxieties of an individual are really not the conflicts which are truly the cause of the disturbance but that the basic personality problems are unconscious. In like manner we believe that the basic personality conflicts underlying the psychosomatic diseases are unconscious, and that therefore one cannot relate the specific mechanism of the disease to an individual's conscious worries and problems. In summary, the theory of the general mechanism of psychosomatic disease can be stated as follows: that a chronically operating unconscious conflict, through the mediation of its associated emotional disturbance by way of the autonomic nervous system, results in chronic, functional, visceral disturbances which ultimately leads to organic disease. So far we have stressed the rôle of the autonomic nervous system, but it is quite probable that as our knowledge of physiology advances, the endocrine system will be found to be another great coordinator of the visceral functions of the body.

Just as in conversion hysteria, when the psychologic conflict is converted into a physical symptom involving the voluntary bodily apparatus, by means of the peripheral nervous system, it is also possible to find a similar direct relationship between the psychic conflict and the visceral disturbance by means of the autonomic nervous system in psychosomatic disease. The reason that the physical process can be a symbolic expression of the psyche is that the basic psychologic needs are ultimately founded on basic physiologic needs. Therefore, throughout life there exists the alternative expression of these needs in either or both psychologic and physiologic manifestations. For

example, an infant's basic physiologic need is for food, and in gratifying this need he is able to love and be loved. As he grows older the getting of food and love becomes synonymous. We are all familiar with the fact that in some people the craving for love is partially satisfied by frequent eating and that tensions are relieved by such devices. We know that drastic reducing diets, either voluntary or recommended by physicians, often produce serious psychologic disturbances.

There are similar relationships between psychologic and physiologic processes dealing with retention and excretion as there is with ingestion. It is possible then for bodily processes which are concerned with ingestion, retention and excretion to express symbolically psychologic needs and conflicts.

The above type of symbolic correspondence appears applicable only to certain organic systems of the body such as the gastro-intestinal, genito-urinary and the respiratory systems. In the cardiovascular system, however, it is difficult to equate the unexpressed rage with the constriction of the peripheral arterioles, even though the psychologic disturbance is believed to be at the basis of certain forms of hypertension. It may be then that since the cardiovascular system is a closed system and cannot discharge tensions directly, the unconscious conflict finds its explanation only in terms of an autonomic discharge pattern expressing a certain emotion.

Finally, it is necessary to attempt to describe some of the psychosomatic syndromes that have been investigated most intensively psychologically, although psychosomatic mechanisms have been claimed in a wide variety of diseases ranging from peptic ulcer to glaucoma. Of these, peptic ulcer, bronchial asthma and essential hypertension have probably been most intensively studied.

In peptic ulcer it is alleged that the individual, under special conditions of increased stress and responsibility, has to face an increased threat to life-long dependent wishes and needs, and with outwardly redoubled efforts to assert his independence and self-sufficiency. The ulcer symptoms which develop are a compromise of the conflict and tend to serve both the purpose of gratification of the denied dependent needs and wishes through the illness, and simultaneously serve as punishment for such infantile strivings. A popular caricature of this syndrome appears in the Dick Tracy funny-paper character, "Diet Smith." However, there has been a strong temptation to apply this formula too readily, and we find that there are notable exceptions. There are some peptic ulcer patients who readily acknowledge their dependent needs, make no protests, and

who develop ulcer symptoms only when these needs are frustrated. Another temptation has been to look for an "ulcer personality," and the result has been disappointing. So far we have discovered that the conflict over the gratification of dependent needs and wishes is solved in a variety of psychologic mechanisms and that it has no fixed relationship to the personality structure. Peptic ulcer has been found in all types of personality disorders, many of the psychoneuroses and psychoses. Therefore, the problem of specificity in relation to the total personality structure is still an unsolved problem and must await further study.

In some cases of hypertension there is found the psychologic picture of strongly repressed rage and resentment which is reacted to by an outward facade of affability and compliance. Often there are found diametrically opposed tendencies to be passive and dependent and to be aggressive, ambitious and competitive. A compromise is again seen by the inability to follow either tendency to satisfaction because of fear or guilt, and the result is a chronic emotional tension that is paralyzed for action. However, while this picture is commonly found, the problem of specificity is again obscured by widely variant mechanisms of solution in relationship to the total personality.

In bronchial asthma, attacks tend to be precipitated by situations that tend to threaten separation from a mother figure. This separation may be physically real or only anticipated, but more commonly the danger feared on estrangement is the exposure to some new temptation which makes it doubly dangerous either to leave or to remain with the mother figure, and the asthmatic attack seems to signify a suppressed cry of rage and grief. This psychologic formula does not ignore the fact that hypersensitivity to certain allergens exists. However, the psychologic conflict appears to act as a "trigger mechanism." Closely associated with bronchial asthma in the psychologic configuration, and often acting as alternate sources of emotional discharge are certain skin affections such as eczema and urticaria. Nevertheless, the same difficulties apply in the problem of specificity and its relationship to the personality types and the total personality.

There are numerous psychoanalytic studies that confirm both the known and the unknown problems in the three psychosomatic syndromes mentioned as well as other psychosomatic syndromes such as chronic ulcerative colitis, mucous colitis, certain types of the anarthropathies, etc. It is not the province of this paper to cover this broad area but to bring out some of the issues at stake and the many unsolved problems that need investiga-

tion by the increased collaboration of clinicians in all the specialties, the clinical pathologist, the physiologist and the clinical psychologist.

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THE ETIOLOGY AND SURGICAL TREATMENT OF INTESTINAL OBSTRUCTION

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Intestinal obstruction is one of the most important conditions with which the medical profession has to deal. The numerous written articles and records of research work directed at the problem are but reflections of the physicians' deep interest in the subject. The various ideas concerning the cause and consequences of intestinal obstruction are testimony that we are not all agreed on the management of such cases. One fact alone appears to be unanimously accepted. Early diagnosis and institution of indicated treatment does save many lives.

Since the medical men have become more and more intestinal obstruction conscious the mortality of a few short years ago (40 per cent to 60 per cent) has dropped decidedly. At the present time life expectancy of an individual with intestinal obstruction is at an all time high; yet, there is room for much improvement.

To define intestinal obstruction specifically is difficult since the signs and symptoms vary considerably, due to the location, type and duration of the obstruction. For the purpose of this paper permit me to define intestinal obstruction as any condition, or group of conditions which cause a stasis of intestinal content or inhibits the normal progress of intestinal content through the alimentary canal. The lesion may be within the lumen, in the wall, or due to pressure from without and it is not essential that the lumen of the gut be occluded as has been demonstrated in cases of ileus, or circulatory deficiency to segments of involved intestine.

The etiology of intestinal obstruction has changed very little in the past several generations except for the increase in those cases following surgical procedures. The marked increase in surgical operations within the abdomen has made the possibility of mechanical obstruction due to bands and adhesions proportionately greater. Also, our

machine age is responsible for more severe injuries and these are not uncommonly associated with intestinal obstruction of a reflex nature.

McIver has classified the various types of obstruction occurring in a ten year period at Massachusetts General Hospital. Of 39,936 surgical admissions there were 335 cases of intestinal obstruction. A slide of his series, as reported, is being presented because it portrays so clearly the types of obstruction dealt with in a large surgical center. Approximately .8 of 1 per cent of all surgical admittances were for intestinal obstruction. These percentages may naturally vary in other institutions because of the different types of cases admitted.

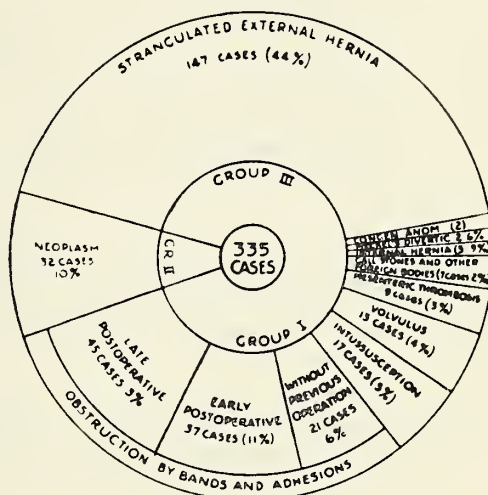


Fig. 1—This chart shows the incidence of various types of obstruction. (McIver, *Arch. Surg.*, xxv:1101, 1932).

(McIver) The incidence of different types of obstruction varies with age, sex, geographic location, etc. Most observers agree that intestinal obstruction occurs more frequently in men than in women and, no doubt, this is because of the relatively higher incidence of hernia found in men. The obstruction secondary to intussusception may occur at any age but is much greater in infancy (first and second year). It has been reported that intussusception is much more frequent in Northern European countries than in America, but so far as I know, the explanation is wanting.

The acute strangulated type of hernia has two peaks—in infancy and again in the older age group, and from observations I have made over a period of twenty years a high percentage of these result from external herniae, which may be readily recognized.

From a pathologic viewpoint, intestinal obstructions may be divided into the simple or strangulated types, the simple obstruction being one without circulatory embarrassment. Failure

and vomiting. As distention increases the intraluminal pressure tends to embarrass the circulation in the intestinal wall above the obstruction. This may be complete enough to cause strangulation with all its complications. Wangenstein and Rea experimenting on dogs completely obstructed the lower ileum after cervical esophagostomy and proved that distention was largely due to swallowed air. They concluded that the mechanical factor of distention, and not a toxic factor, accounted for the lethal issue in ileal obstruction.

Herrin and Meak experimentally distended the upper gut of animals and produced all the symptoms of intestinal obstruction with death of the animals in about eight days. After denervating the distended loops of intestines, the distention was much better tolerated. They concluded that death was not a result of toxemia but primarily due to loss of chlorides.

With beginning distention, there is present increased activity of the secretory glands, which in turn builds up the content within the intestine, necessitating greater peristaltic effort to force the content past the obstruction. So marked is this peristaltic effort that the intestinal pattern may be seen through the abdominal wall in thin persons and sounds emanating from the gut are frequently audible.

Failure of the intestinal content to pass the obstruction and increasing tension within the gut causes fatigue of the musculature, the peristalsis becomes less active, pain less marked but vomiting continues. It has been suggested that vomiting resulted from a reversed peristalsis, but Mall's experiments attempt to disprove such a phenomena.

The content within the intestine above an obstruction or in distended closed loops is extremely toxic and highly infectious and if injected into experimental animals may reproduce the symptoms of acute intestinal obstruction.

C. O. Dragstedt exteriorized the obstructed portion of the intestine, and the symptoms were less severe. He also surrounded the strangulated segment of gut within the abdomen with rubber tissue to prevent absorption by peritoneal surfaces. Again the symptoms were less marked. He theorized that toxins absorbed from contents within the bowel could be responsible for death in acute intestinal obstruction.

Toxins or bacteria do not pass through normal mucosa or intestinal walls, but with the distention and pressure within the gut the venous, and later the arterial circulation become embarrassed. The gut no longer prevents toxins or bacteria from passing through the intestinal wall into the peritoneal cavity. It appears logical that toxemia

and peritonitis participate in the high mortality of intestinal obstruction.

Replacement of lost fluids, protein and electrolytes reduce the toxic manifestations and prolong life, and it must be conceded that dehydration is a most important factor and precedes toxemia. Many investigators attribute death of experimental animals to dehydration and consider toxemia and bacteremia as byproducts of dehydration.

Forty years ago Einhorn experimented with frogs. They were obstructed and then fed bismuth after which they were kept in water to counteract dehydration resulting in their living long enough to satisfy the experimenter that without dehydration obstruction was not too serious.

A careful history and physical examination is essential to rule out conditions that may be mistaken for intestinal obstruction (lead poisoning, acute enteritis and tabetic crisis, etc.). When the history and physical findings suggest intestinal obstruction and examination by x-ray is positive, one should institute immediate treatment. Time should not be lost in the usual early laboratory examinations, for too often they are of no value.

Veal states, "The mortality rate of acute intestinal obstruction is largely mortality of delay and rises each hour that proper treatment is delayed."

The treatment of acute intestinal obstruction may be conservative or radical, or a combination of the two. The conservative or nonsurgical treatment has been popularized in recent years and rightly so. This method permits emptying the stomach and upper alimentary tract by intubation, and in selected instances has proved that all cases of obstruction are not necessarily surgical.

Intubation was first introduced in 1793 by the ingenious John Hunter who invented and made a flexible tube to relieve stomach distention. In recent years small nasal catheters have been made in various sizes and lengths that are capable of emptying the stomach and small intestine if properly used by trained personnel. Such treatment is most valuable in obstructions occurring early after surgical operations and reflex paralytic ileus.

Abbott has done much to popularize the early use of intubation in cases of intestinal obstruction. Despite his enthusiasm for intubation, he cautions against its prolonged use when the clinical symptoms do not materially improve. He states that it is contraindicated in cases of strangulated hernia, except as it is a preparatory measure for surgery. There may be immediate improvement when intubation is used in cases of mechanical obstruction which gives the doctor a feeling of false security and delays surgery.

The release of intestinal distention is only one

phase of the management. Protein substances, electrolytes and fluid have been lost, and replacement of lost elements is essential and should be administered early. Normal saline in 5 to 10 per cent glucose solution intravenously is indicated in amounts necessary to restore the body fluids and tissues to a near normal state. Amigen is used for protein replacement. Blood transfusion or plasma is recommended in those cases of strangulation where rapid loss of blood into the bowel lumen or peritoneal cavity has embarrassed circulation.

For mechanical obstruction surgical procedures are indicated. Certain preparatory measures are valuable, such as restoration of fluid protein and electrolyte balance, blood or plasma if necessary, intubation to release distention and permit the intestine to acquire tone. In the more recent years enterostomy is much less frequent and has vanished as a therapeutic measure in direct proportion to the use of intubation. Intubation may not accomplish all that is to be desired. An aseptic enterostomy in the distended loop above the obstruction becomes mandatory and the major surgical procedure postponed for a later date. Enterostomy may be accomplished with minimal anesthesia. Local anesthesia is indicated in the very poor risks or in the aged. Spinal anesthesia is the one of choice for most cases with intestinal obstruction.

Unnecessary or rough handling of the obstructed intestine showed poor surgical technic and poor judgment.

Harper and Blain III present evidence to show that penicillin given in large doses prophylactically can prevent infection of distended intestinal wall by normal intestinal bacterial flora. The various vaccines do not merit much mention in the treatment of intestinal obstruction. The actual cause of death in intestinal obstruction remains undetermined. Distention, dehydration, protein and electrolyte losses, toxin absorption and infection are proposed by various research workers as causes of death. They do not occur independently of each other, and it appears to me that the mortality rate of acute intestinal obstruction may be further reduced by a treatment to combat the combination of pathologic manifestations.

By preventing distention the toxic substances are not permitted to pass through the intestinal wall for absorption through the peritoneal lymphatics; thus, vomiting is lessened, which in turn prevents dehydration, loss of protein and electrolytes, and the management becomes more simple. Immediate surgical treatment is advised for those cases of mechanical obstruction or those which

are strangulated. Abbott stated: "It is just as bad an error to operate on an unprepared patient as it is to not operate on one which is strangulated."

In emergency cases with acute obstruction, suction may be started immediately and replacement of fluids, electrolytes and protein instituted while an operating room is being prepared.

Lastly, the above suggestions for treatment should not cease when surgical treatment begins but should continue until the involved gut shows evidence that function has returned.

Summary:

1. Prevention of intestinal obstruction, if possible.
2. Early diagnosis.
3. Early active treatment:
 - (a) Conservative for short trial.
 - (b) Radical in mechanical and strangulated obstruction.
4. Continuation of conservative treatment post-operatively until intestinal function is evident.

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RECENT ADVANCES IN ANTIBIOTIC THERAPY:

Inhalation Penicillin

Forest H. Coulson, M.D., Burlington

Recent efforts to discover and market the ideal vehicle in which to inject penicillin have had the tendency to draw the general practitioner's attention away from a valuable way of using penicillin, especially in respiratory infections. This method is by inhalation. Cases of troublesome bronchitis are particularly referred to, and the following instance is related for illustration.

A male, aged 65, was admitted to the hospital completely incapacitated by his respiratory symptoms. For many years he had suffered frequent colds, chronic cough, and occasional attacks of "asthma" during the winter months. His symptoms had slowly progressed in severity in spite of the use of many drugs and inhalations, and even a change of climate in Arizona and New Mexico had been without benefit. The past winter was his most severe, and he was finally unable to work as hired man on a farm. At the time of admission he was dyspneic and complained of pain in the right chest anteriorly. There was no fever or elevation of the white blood count. He coughed frequently and raised tenacious purulent sputum that contained streptococci and diplococci. The chest was emphysematous, and the breath sounds were replaced by moist and musical râles. An x-ray film of the chest showed increased bronchial markings throughout both lung fields. The right hilar shadow extended laterally beyond normal limits.

For the first two days he showed little improvement on intranasal oxygen and theobromine-phenobarbital therapy. He was then placed on penicillin therapy, using 50,000 units of calcium penicillin twice daily by inhalation. A commercial nebulizer attached to an oxygen tank and fitted with a Y tube was used. Potassium iodide was also given by mouth three times daily. During the next three days he enjoyed steady improvement, with diminution in the amount of cough and sputum, and freedom from pain and breathing discomfort. He was dismissed on the sixth day following the first inhalation of penicillin. He was seen one month later and was still free of symptoms. The reported experiences of other men are briefly reviewed.

The first studies on inhalation penicillin were begun in 1942 by workers in the Chemical Warfare Service.¹ They were developing methods of treating secondary infections of the lungs in chemi-

cal warfare casualties. In 1944 other investigators¹ reported that (1) penicillin solutions in concentrations as high as 200,000 units per cc. could be nebulized with commercial nebulizers already available; (2) neither air nor oxygen reduced the potency of penicillin; (3) penicillin from these mists was absorbed by the lungs and could be recovered from the urine; (4) it is safe to inhale therapeutic concentrations of penicillin mist. During the past year there has been an increase in interest in this method of using penicillin, with several series of cases reported. Sputum studies are recorded by Humphrey and Joules.² After inhalation of 15,000 units of penicillin, appreciable amounts were found present in the sputum after six hours. After inhalation of 20,000 to 60,000 units of penicillin, therapeutic concentrations were present in the blood thirty to sixty minutes after inhalation, and 10 to 30 per cent of the dose was recovered in the urine. These findings are evidence of local effect at the site of the respiratory infection being treated, and of absorption of penicillin from the lung. Other writers³ emphasize that control of infection by using inhalation penicillin depends upon the susceptibility of the bacteria, the duration of an adequate local concentration of this agent, and maintenance of a sufficiently high blood level to penetrate dense inflammatory foci. From the above data it appears that inhaled penicillin may fulfill these requirements.

One reporter⁴ points out that penicillin spray is far more effective than oral penicillin as used at the present time, and is more effective by inhalation than by injection in some respiratory infections. A list of conditions treated by inhalation penicillin and reported in the literature includes pneumonia, bronchiectasis, lung abscess, pulmonary emphysema, acute bronchitis and chronic bronchitis. Dosage schedules are not uniform, however, and are reported varying from 15,000 units every four hours to 100,000 units every three hours. The latter doses were used in the pneumonias due to Friedlander's bacillus. In pneumonia and lung abscess cases with severe toxicity, simultaneous use of intramuscular penicillin has been recommended.

The chief clinical effects noted are diminution of sputum, change of sputum to a mucoid character, decreased cough, relief of shortness of breath and subsidence of toxicity. It is characteristic for these effects to be enjoyed following the first few doses of inhaled penicillin. It is generally reported that calcium penicillin is preferable, for it has a much less offensive taste and odor than the sodium salt, and is found less irritating to the oral mucous membranes. Therapeutic results are reported good when a hand operated

bulb atomizer is used to produce the penicillin spray, though a nebulizer attached to an oxygen tank is preferred. With oxygen the patient is able to breathe slowly, and a rebreathing bag may also be used. These two factors allow more efficient use of the penicillin.

Some of the important advantages of inhaled penicillin are presented.

(1) *Ease of administration to both young and old patients.* They can be taught quickly to inhale penicillin mist, and trained medical and nurse personnel are not essential. This makes the method useful in the home where it is dangerous for untrained persons to give intramuscular injections, and inconvenient for the doctor to make several calls each day.

(2) *Painless administration.* The patient who is dyspneic is actually more comfortable during a treatment if the oxygen tank-nebulizer equipment is used.

(3) *Direct application of penicillin to the bronchi and bronchioles.* This gives a powerful local effect in addition to the general effect from penicillin absorbed through the lungs. The patient is grateful for the rapid control of cough, and for the favorable change in the amount and character of sputum.

The present status of the use of penicillin in this manner is summarized editorially in the *Journal of the American Medical Association* as follows: "The results recorded are encouraging. However, much more needs to be done on the subject of penicillin administration by inhalation before this procedure can be considered of established scientific merit. Controlled studies are necessary. Large enough numbers of patients with a single respiratory disease need to be studied and compared with similar groups treated without penicillin and with penicillin administered by the usual intramuscular route. Comparative studies should be made on the value and accuracy of the various types of nebulizers and on their effectiveness in delivering the penicillin where it will do the most good. Important also are careful studies on the optimum dosage of penicillin when given by spray, the preferred frequency of administration and the most desirable medium for dissolving the penicillin. Until these and similar questions have been settled, the administration of penicillin by inhalation for respiratory infections will remain empirical."⁶

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PLASTIC SURGERY OF THE EYELIDS

Carl A Noé, M.D., Cedar Rapids

Since anything that interferes with the proper function of the eyelids also affects the efficiency of the visual function, plastic procedures in the region of the eye properly belong to the field of ophthalmology. Many special problems, such as pressure on the globe and exposure of the cornea, arise in this work, and these can best be evaluated by the ophthalmic surgeon. Hence all of us should be familiar with the common plastic procedures on the lids. Textbooks on the subject show a great variety of operations with many drawings which present a difficult choice to most of us. A brief discussion of the common lid conditions requiring plastic correction, and a description of simple technics which have worked satisfactorily may be of help to all of us.

Ectropion:

(a) Senile type

We all see this condition frequently. The lower lid is everted, and usually a chronic conjunctivitis is present. The punctum is everted, and the tears flow over the lower lid.

Treatment consists of first clearing up the conjunctivitis as much as possible by weak silver nitrate applications and the use of zephiran or penicillin drops. In mild cases Ziegler cautery punctures 3 to 4 mm. behind the lid margin and the same distance apart into the tarsus under local 2 per cent novocaine anesthesia produce good results. In more severe cases a lid shortening operation, preferably of the Khunt-Szymanowski type gives the best results. With the use of penicillin ointment under the dressing, infection can be avoided and better results can be obtained. The details of the technic can be found on page 422 of Spaeth's¹ textbook.

(b) Paralytic type

In seventh nerve paralysis the lower lid sometimes droops so that there is marked epiphora and exposure of the cornea. Such lids can be made to function better by a lid shortening operation which consists of excising a V in the outer drooping portion after splitting the lid into anterior and posterior halves and excising portions not directly superimposed.

(c) Cicatricial type

An important part of the treatment is prevention. A very careful approximation of the edges

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of all wounds in or near the lids with an anticipation of future contraction of the suture lines by small Y plastic procedures may save much trouble. In established cases, after all contracture has taken place, the careful excision of all scar tissue with resuturing in mild cases or the careful filling of the defect with a full thickness skin graft may be necessary. The technic of skin grafting will be discussed later.

Entropion:

(a) Spastic type

This is commonly seen in the lower lid of elderly people. Without history of previous lid disease or injury the lower lid is completely inverted and the lashes are scouring the eyeball. The lid is easily everted by a downward pull.

Excellent results can be obtained by placing a row of Ziegler cautery punctures under 2 per cent novocaine with adrenalin anesthesia deeply through the skin into the lid structures to the tarsal plate, about 3 mm. from the lid margin. This weakens the strip of orbicularis muscle which inverts the lid and tends to draw the lid margin into proper position by mild scar contracture. If it fails once, this procedure can be repeated. Also good results can be obtained by resecting a strip of orbicularis muscle about 3 mm. wide next to the lid margin. Excision of a very narrow strip of skin may be necessary.

(b) Cicatricial type.

This occurs in upper or lower lids commonly with tarsal deformity. Usually a V wedge of the tarsus parallel with the lid border must be excised straightening tarsus and lid. In the post-traumatic types treatment must be fitted to the individual case.

Trichiasis:

The ordinary case has a number of lashes, usually very fine ones, which may be hard to see except with a loupe and good illumination. They, however, cause great discomfort. The only relief many of these patients have had has been from repeated plucking of these lashes.

A fairly simple and a very effective treatment of this condition is the removal of the offending lashes by electrolysis. The lid must be anesthetized with novocaine and adrenalin. The negative electrode which can well be made out of a fine sewing needle fitted into a handle is inserted into the hair follicle under loupe magnification and with the aid of a hand slit lamp, and the moistened positive electrode is applied to the wrist. The current is turned on and gently increased by means of a rheostat until bubbles form around the needle in the hair follicle. Then the current is turned off and the lash should fall out. If it doesn't come

out very easily the procedure must be repeated. A convenient source of galvanic current is a small 45 volt radio B battery with a resistance (20,000 ohm) and a rheostat in the circuit. Any electrician can make such an apparatus. It was recently described by Guyton² but has been used in our office for seven years.

Blepharoptosis:

This is a very large subject and cannot be discussed completely here. Ptosis of the lids can be divided into the congenital and the acquired type. It is common enough so that we should all be familiar with the broad aspects of the subject. If correction is indicated it must be made by surgery or "crutch" glasses. Many operations have been described and used. They are divided mainly into two groups—one consisting of shortening of the levator and the other of utilizing the action of the superior rectus. Some operations utilize the occipito-frontalis.

The results of all these procedures are as a rule not perfect, although marked improvement can be achieved. In general, I believe that the levator shortening operations, when sufficient levator action is present, are preferable. Superior rectus operations can usually not be used in unilateral cases. I believe the easiest levator shortening procedure is the Everbush operation in which the approach is through the outer surface of the lid. Also, I believe that the best procedure utilizing the superior rectus is the Dickey operation which uses a fascia lata sling looped under either the middle third, or as modified by Gifford, under the whole superior rectus tendon and sutured to the front of the tarsus. Of the procedures using the occipito-frontalis action the Hess operation seems to me the best. It consists of dissecting free the skin from the brow to the lid margin and then placing long sutures from the lid margin to above the brow, drawing up the lid and causing cicatricial shortening of the lid.

The special indications for the various operations are well summarized by Spaeth¹ in a table on page 375 of the latest edition of his text on ophthalmic surgery.

Tumors:

Many small tumors either on the skin or on the lid margin can be successfully excised and closure made without causing deformity. It is not uncommon to have the histologic report read carcinoma when the clinical diagnosis was fibroma or papilloma.

Larger tumors, which are usually basal cell or epidermoid carcinomas may be treated by irradiation or excision. There are enthusiasts for each type of therapy. Some lesions are unques-

tionably better excised. In lesions involving the lid margin a full thickness V shaped excision of half the lid can be made and the cut edges of the defect approximated if an external canthoplasty is made to allow for some of the shortening. I have obtained the best approximation of the cut edges by using figure 8 silk sutures first through conjunctiva and tarsus, and then through orbicularis and skin on the other side. The lid margin must be carefully approximated to prevent notching. One good tension suture tied over buttons should be used.

Complete lid reconstruction may be necessary in larger excisions. Many operations have been used. Recently Wendell Hughes³ has described a procedure which sounds fairly simple and effective. It is fully explained in his small book.

Skin Grafts:

It is often necessary to employ skin grafts in the region of the eye to reconstruct contracted sockets, to fill defects resulting from the removal of tumors, to liberate scarred lids, or to prevent traction on the lids after injuries. The results are excellent if proper technic is followed. In reconstruction of the contracted socket split grafts are best. They are most easily obtained with a Padgett dermatome. In work on the lids full thickness grafts are preferable because they contract less. Thin skin from the other eyelid, or from the postauricular region is best. The graft should be cut slightly larger than the rubber tissue pattern of the defect to be filled. It should be as thin as it can be cut with a sharp knife and should not contain any subcutaneous fat. Buttonholing the graft doesn't hurt. Scissors dissection may reduce the viability of the graft. The bed must be ready and bloodless when the graft is cut, and the graft should be immediately transferred and sewed into place with fine silk marginal sutures. Several small holes should be made in the graft to permit serum to exude from under it. A piece of rubber tissue buttered with penicillin or sulfathiazole ointment should then be placed over the graft and a piece of sea sponge over this. This should be well fixed with adhesive tape so that the outer pressure dressing may be changed without disturbing the graft. The lids must be well closed, and too much pressure on the eyeball must be avoided. If the defect is large it is best to make a permanent tarsorrhaphy by denuding adjacent areas of lid border of epithelium and approximating them directly with silk sutures over beads or buttons. The resulting adhesions are left in place until all contracture of the graft has occurred, which may be several months. The dressing should be applied firmly and should not

be changed unless absolutely necessary before the fifth day and is best left for seven to eight days. Pressure should be maintained for ten to twelve days. Massage may be started after three weeks.

The most common causes of failure of this type of graft are exudation of serum or blood under the graft, or infection. Proper "pie crusting" of the graft, proper pressure, avoiding early change of dressing, proper asepsis, and the use of penicillin or sulfathiazole ointment should prevent these complications.

Summary:

The common plastic procedures on the eyelids have been briefly described. Many of them can be applied frequently in our practice and give great relief to our patients.

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Discussion

Dr. Francis Quinn, Dubuque, in collaboration with Dr. Lincoln F. Steffens, Dubuque: Dr. Noé has covered the subject very well in the time he had. It is difficult to talk about plastic surgery. Deformities of the lids have to be seen and felt before one can decide on what to do.

The color of the lids is an important consideration when grafts are contemplated. Fortunately, most deformities of the lids requiring grafts involve the lower lid, and the graft can be taken from the upper lid of the same eye or the other eye. It is important that we do not convert a small physiologic deformity into a greater cosmetic blemish. This point was driven home very forcibly in some of our World War II casualties where lid grafts were made from skin from the abdomen or legs. Some of the results were cosmetically poor.

Ziegler cautery punctures are eventually successful in correcting spastic entropion. However, I have usually had to repeat the procedure at least twice. I prefer excision of skin, or skin and muscle. It is important that the skin to be removed be marked by a scalpel before novocaine is injected; otherwise, too small an amount of skin will be removed because of the stretching produced by the novocaine.

Ptoxis of the lids is often difficult to correct. One should be very careful to test the action of the levator by preventing the frontalis from raising the eyelid. I do not believe that it does any good to shorten the levator when its action is very weak or entirely absent. If there is no frontalis paralysis present and complete loss of function in the levator I usually do the old Hunt-Tansley operation with some modification. This procedure differs somewhat from the Hess operation in that a vertical strip of skin is dissected loose from the lid and passed underneath the eyebrow through a tunnel and attached to the frontalis muscle.

I agree with Dr. Noé that many deformities of the lids could be prevented by proper, immediate attention to a wound soon after the injury has occurred.

Very little debridement should be done and the wound should be sutured immediately, provided, of course, that too much tissue has not been lost. Where there has been loss of much of the lid, plastic procedures may sometimes be necessary immediately to preserve the cornea, even though, especially in burns, one knows that another procedure will eventually have to be done.

**Iowa Methodist Hospital
CLINICOPATHOLOGIC
CONFERENCE
April 14, 1947**

**Tom B. Throckmorton, M.D.,
R. F. Birge, M.D., and
Jane W. McMullen, M.D., Des Moines**

Summary of Clinical Record

Dr. Jane W. McMullen (Resident in Pediatrics): A six year old white girl was admitted to the Raymond Blank Memorial Hospital (unit of the Iowa Methodist Hospital) on Nov. 7, 1946, with complaint of personality changes, frontal headache and ataxia of six weeks' duration.

Late in August the child began to show change in disposition. Left convergent strabismus, present since birth, became increasingly severe. At the suggestion of an eye doctor, the child's right eye was covered with a dark patch to force her to use her weak left eye. In mid-September, she began to complain of being able to see out of only one eye. She would occasionally stumble and run into things. She would awaken at night complaining of headache. However, headaches would soon spontaneously subside, and the child would go to sleep. During the two weeks prior to admission, the symptoms became progressively worse. She complained frequently of diplopia. Her gait was very uncertain. Frequently, she screamed with pain localized chiefly in the region of the forehead. However, no episodes of vomiting or convulsions were noticed.

History of injury, which might cause brain damage, was not elicited. Previous illnesses were chickenpox, measles and otitis media, but there was no history of recent ear, nose or throat infection. The child had received no immunizations against disease. Delivery had been normal; the birth weight was seven pounds, nine ounces. Following birth, no cyanosis, convulsions or jaundice were observed. She sat alone at four and

one half months, stood at nine months, and walked at eleven months.

The patient was a well-developed, well-nourished, afebrile, six year old girl who, on admission, was sleeping soundly. When awakened, she immediately started crying and rubbing her forehead. The head was normal in size and shape, but questionable crack-pot resonance was elicited. The ears, nose, throat and neck were normal. The lungs were clear to auscultation and percussion. The heart was not enlarged to percussion, and heart sounds were physiologic. Blood pressure was 118 systolic, 76 diastolic. The abdomen showed no tumor, ascites or distention. No lymphadenopathy was demonstrable. The genitalia were normal.

On neurologic examination, the pupils were observed to be round and equal, reacting to light and accommodation. The ocular fundi showed grade one choke. Visual fields were apparently full. Sixth nerve paresis was present bilaterally. There was no ptosis of the eyelids. On right and left lateral gaze, nystagmus appeared. The conjunctival reflexes were normal. No trigeminal nerve impairment could be demonstrated. The tongue and soft palate showed no paresis. Hearing, speech, deglutition and respiration were normal. Definite, moderate dyskinesia and asynergy were demonstrable bilaterally by finger-to-nose tests, but heel-to-knee tests were normal. No tremor, stiffness of the neck, spinal rigidity, muscular atrophy or fibrillation were noted. Response to sharp and dull stimuli, cotton touch, heat and cold were normal. The postural sense seemed normal. Astereognosis was not demonstrable, but the patient's age precluded testing for adiadokokinesis. Reflexes were physiologic, except that both knee jerks were brisk, the abdominal reflexes were variable, and a bilateral Babinski response was inconstantly present. The gait was definitely cerebellar in type, without definite directional trend. Static ataxia, with or without the eyes closed, was rather marked.

On admission, the erythrocyte count was 3,900,000 and the hemoglobin 12.7 grams. The leukocyte count was 9,050; the differential count was normal. The coagulation time was four minutes, and the bleeding time was one minute. The urine was normal. Kline and Kahn tests were negative. Spinal puncture was considered to be contraindicated.

Radiographs of the skull revealed a rather marked increase in the convolutional markings, especially in the posterior parietal and occipital regions. However, there was no bone erosion of calcification, and the sella appeared normal.

On November 13, a trocar was inserted into the right lateral ventricle, with escape of blood-tinged fluid under moderate pressure. Suboccipital exploration revealed cloudiness of the arachnoid in the region of the fourth ventricle, and hemorrhage and friability of the surface of the cerebellum. No tumor was demonstrable in the cerebellum or region of the fourth ventricle. Therefore, 2 cc. of indigo carmine was placed into the right lateral ventricle. No escape of this dye from the fourth ventricle was observed over a period of four minutes. Spinal puncture yielded clear fluid. The postoperative course was uneventful.

On November 19 the optic disks appeared to be much more clearly outlined than preoperatively. Retinal hemorrhages were present in the temporal area of the left eye. The neurosurgeon suggested that these areas might possibly be hemangiomas, postulating that an associated hemangioma of the cerebellum (Lindau's syndrome) might account for the patient's symptomatology. After a course of x-ray treatments over the cerebellum, she was discharged on her seventeenth hospital day.

The girl was readmitted Jan. 23, 1947. During the period at home, paralysis of the right arm appeared and speech became incoherent. Vomiting had been frequent during the past four days. On physical examination there was observed bilateral sixth nerve paralysis, bilateral Babinski, right ankle clonus, slight left ankle clonus, weakness of right upper and lower extremities, slight choking of the disks, and bulging of the suboccipital decompression. The retinal hemorrhages were no longer visible. Laboratory findings, including the hemogram, were unaltered.

On January 28 ventriculography revealed good filling of the lateral and third ventricles, which were moderately dilated but symmetrical and normal in position and relationship to each other. The aqueduct of Sylvius and fourth ventricle were not visualized. The posterior horn of the right lateral ventricle was apparently undeveloped and had the appearance of a congenital anomaly.

At the time of ventriculography, mild icterus was noted. Postoperatively, the temperature was 105 degrees. Fever persisted for five days. The erythrocyte count dropped precipitously to 1,670,000; the hemoglobin was 4.8 grams, the leukocyte count 17,500, and the platelet count 480,000. The clotting time was eight minutes and the bleeding time one minute, ten seconds. The prothrombin time was 78 per cent of normal. Clot retraction began in thirty minutes and was complete in four hours.

The blood picture was interpreted as that of acute hemolytic icterus; basophilic stippling was not

demonstrable. The icterus index was 22 units, and the serum bilirubin was 2.4 mgm. per cent, indirect reaction. The urine urobilinogen was positive 1:40.

Following blood transfusion, the child quickly recovered from the acute hemolytic episode.

On February 13, in an effort to alleviate the internal hydrocephalus, the choroid plexus of the right lateral ventricle was removed and cauterized. The patient did not regain consciousness. The course was febrile and progressively downhill, and death occurred on March 15, 1947.

Clinical Discussion

Dr. Tom B. Throckmorton (Neurology): The problem which confronts us in this case is not academic. It deals unquestionably with a lesion within the cranial cavity. The clinical symptoms were highly suggestive of brain tumor or some space-occupying body in the cranial cavity. It has long been known that progressive cerebral lesions, as a rule, produce their effects not so much by destruction of brain substance but mainly by interference with the circulation of the cerebrospinal fluid or the blood, together with displacement, distortion or compression of nerve elements. A fundamental maxim of cerebral pathology is that moderate compression produces, at first, local venous engorgement with increased excitability of brain tissue; further increase of abnormal pressure produces local cerebral anemia with loss of function and paralytic phenomena.

General and Focal Symptoms.—The symptoms of brain tumor or increased intracranial pressure are general and focal. General symptoms such as headache, vomiting, choked disk, vertigo, bradycardia and general convulsions are due chiefly to increased intracranial pressure or disturbance of circulation such as passive congestion or edema. However, kidney disease, severe anemia and lead poisoning must be excluded as provocative factors. Focal symptoms, to be of diagnostic value, should be considered in their chronologic order. The early symptoms are of the greatest importance but sometimes may prove to be false or misleading.

In this case, personality change or a change in disposition is recorded as the earliest symptom. This suggests a frontal lobe lesion since the higher psychic centers are localized in the prefrontal lobes. The nature and character of these mental changes are not indicated in the history.

The presence of frontal headache may or may not be of significance. A growth which stretches the meninges or which directly or indirectly interferes with the circulation of blood in this area may give rise to this symptom. A change in the

percussion note or increased sensitivity when an area is percussed or pressed upon may be suggestive of a lesion in that region. Osseous changes found on x-ray examination would be helpful if focal symptoms arose from that area. No such findings were present in this case.

Ataxia always indicates muscular incoordination. A reeling, lurching, staggering gait always means cerebellar involvement. If the lesion is confined to one cerebellar lobe the tendency is for the patient to move or fall toward the side of the lesion. In this case the gait was without definite directional trend. This suggests a lesion of the cerebellum, of mid-lobe or vermis origin. That the ataxia was uninfluenced on closure of the eyes is positive proof of cerebellum involvement, direct or indirect.

The convergent strabismus of the left eye was due to a paresis or paralysis of the left external rectus muscle supplied by the abducens nerve. Involvement of this nerve is of no diagnostic value unless accompanied by other focal signs such as trigeminal, facial or auditory nerve symptoms. The subsequent involvement of the right abducens nerve indicates that traction or pressure occurred along the base of the brain and involved the nerve trunks or their nuclei in the brain stem.

Other symptoms mentioned in the protocol are horizontal nystagmus, incoordination of the upper extremities, variability in the abdominal and extensor toe reflexes, and a questionable cracked-pot sound. Horizontal nystagmus indicates involvement of the vestibular apparatus, of the cerebellum, or of their connecting pathways with the ocular mechanism. Vertical nystagmus, absent in this case, always means the presence of an intrapontine lesion. Incoordination of the upper extremities was indicated by the finger-to-nose test. Unfortunately, the presence or absence of adiadokokinesis (inability to alternately pronate and supinate the forearms) was not determined. When these movements are awkwardly performed it means that the cerebellum is involved. The variability in the abdominal and extensor toe reflexes was an interesting finding in this case. It was suggestive of an irritative lesion in the upper motor pathways. Intermittent pressure on these pathways could account for this clinical phenomenon. A questionable cracked-pot sound was also reported. If present, this finding would indicate separation of the cranial sutures due to increased intracranial pressure. The x-ray report, however, was silent on this matter.

Laboratory Findings.—The laboratory findings are of little help. The blood showed a mild secondary anemia. The Kline and Kahn tests were negative. The spinal fluid findings are helpful

only in that the fluid was reported to be clear; no mention was made as to the cell count, protein per cent or even pressure measurement. The x-ray report, however, is of value. It was negative for bone erosion or calcification; it was positive for increased intracranial pressure, as evidenced by an increase in the convolutional markings of the brain, particularly in the posterior parietal and occipital regions.

Preoperative Remarks.—The above findings justify the diagnosis of brain tumor, or other space occupying body in the cranial cavity, interfering with the circulation of the cerebrospinal fluid. Bilateral choked disk was the most important sign of the general symptoms. Headache, with its acute onset and rapid subsidence of its paroxysms, suggests something of a mechanical nature blocking off or interfering temporarily with the circulation of the cerebrospinal fluid. Engorgement of the cerebral vessels of the meninges might be a factor in its production, but the sudden cessation of pain on change of the position of the head hardly would result if the pain was due to engorgement alone. Intermittent blocking of the foramen of Munro or the aqueduct of Sylvius could account for the paroxysmal headaches.

The two most likely sites for tumor are anterior and posterior. Since the first recorded symptom was a change in personality or disposition, one would most naturally think of a frontal lobe lesion. It is true that frontal lobe lesions may give rise to cerebellar symptoms, either through involvement of association tracts (the fronto-ponto-cerebellar pathways) or by exerting pressure backward and downward on the cerebellum. The converse is true, also, that cerebellar lesions may give rise to frontal lobe symptoms. In a frontal lobe tumor, the growth may extend downward and backward in which instance additional symptoms, such as unilateral loss of smell due to involvement of the olfactory nerve, or motor aphasia as a result of involvement of Broca's speech area or difficulty in writing from involvement of the writing center, would be expected. None of these symptoms is recorded in the protocol until after the first operation. When the fronto-ponto-cerebellar tract is involved one should look for cerebellar symptoms on the side *opposite* the frontal lesion. Since the cerebellar symptoms in this case do not point to a unilateral cerebellar lobe involvement, one would have to assume that both frontal lobes were affected in order to explain the cerebellar gait present in this case.

If the occipital lobe was the site of the lesion, one would expect encroachment upon the optic radiation or its cortical center, the cuneus, with resulting homonymous hemianopia. But the visual

fields were reported normal. However, the absence of the posterior horn of the right ventricle might or might not be of significance.

The early record is devoid of any symptoms suggestive of parietal lobe or temporal lobe involvement, such as motor or sensory paralysis, loss of the stereognostic sense, or uncinat fits. Likewise, there is nothing on record to suggest a tumor of the pituitary body or of the hypothalamic area. A tumor of the third ventricle or of the fourth ventricle must be thought of, but again symptoms of such involvement, aside from possible hydrocephalus, do not seem apparent in the recorded findings. Tumor of the pineal gland, a not infrequent brain lesion in children, could produce, by pressure on the aqueduct of Sylvius, hydrocephalus with its attendant increase in intracranial pressure. However, no clinical findings, such as precocious development of the body and mind with concomitant sex changes, are mentioned in the protocol. Nevertheless, their absence does not rule out the possibility of such a tumor, since the pineal gland was not calcified and therefore could not be visualized on the x-ray film.

Of the brain proper, this leaves only the brain stem and the cerebellum to be considered. A tumor arising from the quadrigeminal bodies would be expected to give origin to symptoms referable to the ocular or auditory apparatus, namely, third nerve symptoms or deafness. The record is silent for any such findings. Tumor of the pons, the medulla and the fourth ventricle, likewise, must be considered. A space-occupying body arising

from any of these structures, especially the pons, could interfere with the circulation of the cerebrospinal fluid and thus bring about symptoms due to mechanical block. Some evidence of cranial nerve involvement, from the third to the twelfth, certainly would be anticipated in such an instance. The only positive finding reported in this case was bilateral sixth nerve paralysis. If other cranial nerves were involved, no mention is made in the record.

There is no question but that the cerebellum was implicated either directly or indirectly. A tumor of the vermis could readily account for the static ataxia, the cerebellar gait without directional trend, and the horizontal nystagmus. The presence of tonic cerebellar fits involving the muscles of the eyes, face and extremities is sometimes observed in cerebellar lesions. But no such findings are reported in this case. Their absence is of no significance; their presence would be conclusive.

Operative Findings.—The exposure of the under surface of the cerebellum and of the fourth ventricle failed to demonstrate the presence of a tumor. Rather, it seems to me, it was the apparent thought of those individuals connected with the case that the symptoms of the patient could best be explained on the basis of an inflammatory lesion. A block of the aqueduct of Sylvius seemed certain as there was no evidence of the dye, which was introduced into the right lateral ventricle, making its escape into the fourth ventricle.

The hemorrhagic appearance of the dura and cerebellar hemispheres, with later appearance of retinal hemorrhages in the left eye, seemed to warrant the diagnosis of Lindau's disease. Following x-ray therapy to the cerebellum, the patient was discharged from the hospital.

Subsequent Course.—The patient was readmitted to the hospital two months later with right hemiplegia, an associated speech defect, slight clonus of the left ankle, and bilateral Babinski's signs. Evidently the appearance of new symptoms, increased upper motor pathway involvement and speech difficulty, prompted a study of the ventricular system, for ventriculography was done. The roentgenologist* reported that there was good filling of the lateral and third ventricles, which were moderately dilated but symmetrical and normal in position and relationship to each other. The aqueduct of Sylvius and fourth ventricle were not visualized. The posterior horn of the right lateral ventricle was apparently undeveloped and had the appearance of a congenital anomaly.

It is my impression that the report of the hemo-

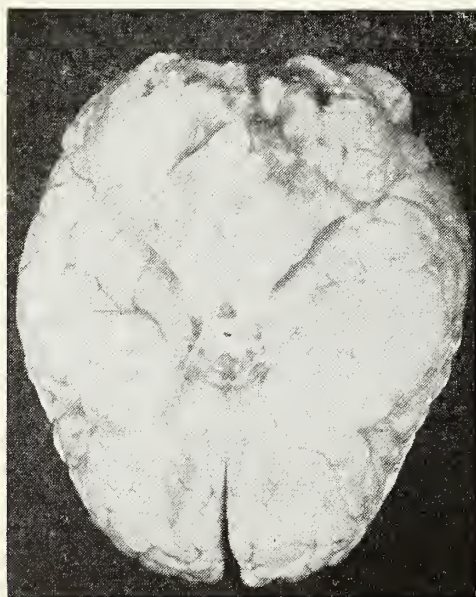


Fig. 1. Note the massive enlargement of the pons.

*Dr. Allan B. Phillips, Des Moines.

lytic icterus which followed the ventriculography is mentioned merely for the purpose of confounding the discussor. Certainly I do not see its relation to what I believe to be the underlying trouble, namely, a space-occupying body in the cranial cavity.

The roentgen findings are quite significant. They tend to rule out a frontal lobe tumor and place the cause of hydrocephalus, with its attendant increase in intracranial pressure, on something which blocked the aqueduct of Sylvius. This brings up the sixty-four dollar question: What was the cause of the block and from what structure did the blocking agent arise?

It is certain that inflammatory changes within the aqueduct could readily obstruct its lumen, but I question if they alone would account for the neurologic findings in this case. Since the region in which the block occurred was rather limited in area it seems logical to consider the following structures of the brain from which a space-occupying body might grow and obstruct the Sylvian aqueduct:

1. The posterior end of the corpus callosum. As far as we know, this region does not give origin to localizing symptoms.

2. The crura cerebri. Involvement of this area should give origin to motor tract symptoms, possibly with involvement of the third nerve. While both upper motor pathways were involved in this case, still there was no evidence of motoroculi implication.

3. Corpora quadrigemina. If these bodies were the seat of the lesion, one would expect ocular and auditory symptoms. None was reported in this case.

4. Velum interpositum or choroid plexus. As far as we know these structures have no localizing value.

5. Pineal gland. In this case no clinical symptoms were reported which would suggest involvement of this structure.

6. Cerebellum, especially the vermis. There was ample evidence that the small brain or its connecting pathways with the brain stem were involved.

7. Pons Varolii. The involvement of this important part of the brain axis should give rise to crossed motor symptoms and to cranial nerve phenomena. One would expect to find evidence of hemiplegia on the side opposite to the lesion with accompanying symptoms of fifth, sixth or seventh nerve paralysis on the side of the lesion. In this case both upper motor pathways were involved as were also both abducens nerves. These findings should place the lesion in the pons, but one would expect also the presence of other focal

signs if this structure was involved to any great extent.

There are other structures not connected with the brain, but which enclose it, from which a tumor might arise, namely, the falx cerebri, the falx cerebelli and the tentorium cerebelli. I know of no way of localizing the origin of any growth which springs from the dura mater except at operation or at the postmortem table. Therefore I must leave this speculation to the pathologist. That one of these structures may prove to be the site of the lesion is by no means impossible.

An additional finding which would be of help, but which is not available in this case, would be a shift in the pineal gland, in which instance the inference would be that something had produced a disarrangement of brain structure above the tentorium. A tumor springing from this gland or from the dura immediately above the brain stem could account for the clinical picture.

From the x-ray findings, it seems improbable that a frontal lobe lesion was present in spite of the fact that mental symptoms of a personality character were the earliest ones reported, and a definite right-sided hemiplegia associated with speech defect eventually made its appearance. The findings following ventriculography also confirm the nonpatency of the aqueduct which was demonstrated at the first operation.

Finally, there was one observation made by the roentgenologist which must be cleared up even if we have to wait for the answer from the autopsy report. Was the posterior horn of the right ventricle absent from a congenital defect, or was its absence due to the presence of or pressure from a space-occupying body which involved directly or indirectly the right occipital lobe? This is an important question, as it may have considerable bearing on the problem under consideration. If the horn was absent as the result of a growth, then left homonymous hemianopia should have been present regardless of whether the lobe was primarily involved or was pressed upon by a tumor springing from the falx or the tentorium.

The likelihood of a cysticercus cyst as the exciting lesion in this case seems highly improbable to me. It is mentioned only for its academic interest.

Conclusions.—I believe that:

1. We are dealing with a space-occupying body rather than an inflammatory lesion.

2. Pressure on the aqueduct of Sylvius and its contiguous structures by a tumor account for the clinical picture.

3. Aside from the cerebellar syndrome (static ataxia, cerebellar gait, horizontal nystagmus and early frontal lobe symptoms), there is little else

to suggest the possibility of the brain stem being the site of the lesion, except that both sixth nerves and both upper motor pathways were involved.*

4. The possibility of a dural growth cannot be discounted. If I were forced to make a guess as to the probable origin of such a growth, I would say it was from the right side of the falx cerebri or from the upper surface of the right tentorium. I base my conclusion on the fact that the right occipital lobe was reported as showing an absence of the posterior horn of the right ventricle. If the defect was not congenital, it stands to reason that it was most likely mechanical in origin.

Summary.—I believe we are dealing with a space-occupying body, probably a brain tumor, which existed in the posterior fossa. The cerebellar pathways were involved either in the vermis or the peduncles. Both upper motor pathways were implicated. Bilateral abducens paralysis was present. The most likely lesions that could involve all of these structures are:

1. A tumor of the vermis (ruled out at operation).

2. A tumor of the brain stem (crura cerebri or pons Varolii).

3. A tumor arising from the meninges and pressing on the cerebellum or brain stem.

Finally let us remember that medicine is not an exact science and that disease cannot be determined, in all cases, with mathematical precision.

Clinical Diagnoses

Preoperative: Tumor of Vermis.

Postoperative: Internal Hydrocephalus (etiology uncertain).

Dr. Throckmorton's Diagnosis

Tumor of Crura Cerebri, Pons, or Adjacent Dural Reflections.

Necropsy Diagnoses

Glioblastoma Multiforme of Pons.

Neoplastic Obstruction of Fourth Ventricle.

Internal Hydrocephalus.

Subacute Cystitis.

Ascending Subacute Pyelonephritis.

Congenital Absence of Posterior Horn of Right Ventricle.

Summary of Necropsy Findings

Dr. R. F. Birge (Pathology): There was generalized thinning of the bones of the calvarium. The pontine fossa was broad and rather shallow. Practically no fluid was present in the subarachnoid space, while the cortical convolutions were

flattened, and the sulci between them unusually narrow.

A huge neoplasm was situated in the region of the pons which was over two times normal in size. It replaced most of the tissue of the inferior and caudal portions of the pons and encroached slightly upon the medulla. It extended upwards and posteriorly to form a bulging rounded mass which had greatly elevated the floor of the fourth ventricle. As a result, the ependymal surface of the fourth ventricle was tremendously enlarged, but the chamber, of course, was completely collapsed and empty.

The neoplasm was composed of rather soft, glistening, homogeneous, pale gray tissue, which in places showed a slightly greenish tint. Microscopically, it was found to be composed of rather small atypical astrocytes containing various sized hyperchromatic nuclei. The tumor had a mixed, variable appearance. Occasionally the cells seemed to be grouped in small clusters. In some places they showed a tendency to arrange themselves in radial fashion about tiny vessels. At a few points, they were grouped in bands, with the axes of the cells arranged in parallel. The tumor was quite vascular. A few thin-walled vessels within the tumor contained thrombi, but endothelial proliferation and necrosis of the neoplastic tissue, so characteristic of glioblastoma multiforme of the cerebrum of adults, was not apparent.

A group of seemingly rather closely related gliomas of the brain stem of children has been variously classified by various neuropathologists. Classification is difficult and seems to depend upon slightly variable histologic features. The more malignant are usually diagnosed glioblastoma multiforme. The more innocent ones, composed of cells closely resembling normal astrocytes, are termed astrocytomas. Still others displaying parallel arrangement of the axes of the cells are considered to be spongioblastoma polare or spongioblastoma of primitive type. Slightly variable or mixed histologic features are sometimes apparent, and it is occasionally necessary to classify them simply as gliomas of mixed type. In our case, features of glioblastoma multiforme were predominant, and that is my diagnosis.

One other finding was of interest. We observed the congenital absence of the posterior horn of the right ventricle, previously demonstrated radiographically. Dr. Phillips, will you please comment on this?

Comment

Dr. Allan B. Phillips (Radiology): In reply to Dr. Birge's question, if the posterior horn were deformed from a tumor, it should be displaced

*I have observed abducens paralysis as the first symptom of a pontine tumor, but sooner or later this symptom was followed by other focal signs which were indicative of a lesion of the pons. In one instance, thirteen years elapsed between the appearance of this symptom, and the death of the patient.

either above, below, medial or lateral as compared to the posterior horn on the opposite side. This horn was symmetrical with the horn on the left except for the absence of posterior projection; there was no dislocation.

Dr. Eugene C. Penn (Internal Medicine): Dr. Fred Sternagel and I saw this little girl in our office on November 5. The parents informed me that she had been well until August, 1946, when she became fussy and irritable and her internal strabismus became much worse.

She had been seen by an eye specialist who was treating her for internal squint. However, upon examination it was found that she had grade one choked disk bilaterally. She showed difficulty in walking, and cried out occasionally with pain in her head. Feeling that she had a serious intracranial condition, I advised immediate hospitalization.

It is felt that, whenever a patient has any findings which pertain to an intracranial disturbance, the examining doctor, whether he is an eye specialist or a general practitioner, should do a fundus-copic examination.

Dr. Frank A. Ely (Neurology): My first observations of this little girl were made on Nov. 9, 1946, when I made the following notations:

"Age six. Rapid symptomatic progress. Bilateral choked disks. Bilateral sixth nerve paralysis. Cerebellar gait without specific directional trend. Static ataxia, with or without eyes closed. X-ray of head reveals accentuation of convolutional markings. Clinical evidence indicates neoplasm of vermis. Patient's age makes a medulloblastoma most probable. Cerebellar exploration indicated."

I was present at the first operation, and when the cerebellum was uncovered felt reasonably sure that we were dealing with a chronic inflammatory process which had blocked the aqueduct of Sylvius. Hence, I was obliged to content myself with a diagnosis of obstructive hydrocephalus of undetermined cause.

Dr. Walter D. Abbott (Neurosurgery): In retrospect, there are two points which are of clinical value. The papilledema was not in keeping with that of a cerebellar lesion, as tumors of the posterior fossa usually produce fulminant choked disks with flame shaped hemorrhages.

Secondly, the interpretation of the ventriculogram would indicate the possibility of tumor occluding the aqueduct of Sylvius. However, the inflammatory appearance of the meninges observed at the first operation misled us as to the presence of a neoplasm in this area.

Dr. Lee F. Hill (Pediatrics): There are two things about this case of special interest to me.

The first is the typical story of an expanding intracranial lesion, one which could not be demonstrated by surgical exploration. The postmortem evidence that this child did have a brain tumor would seem to restore one's confidence in the reliability of symptoms and physical findings which are ordinarily accepted as indicating an increase of intracranial pressure.

The second point of interest is the cause of the acute hemolytic crisis. In reviewing the possible explanations for an episode of this sort, one thinks of the role of such drugs as sulfanilamide; however, there was no history of drug therapy which could have a bearing in this case. Lead poisoning intrigued us for a time due to the possibility that all of the clinical manifestations might have been on the basis of lead encephalitis. However, radiographic and laboratory studies did not reveal evidence of lead poisoning. Acute hemolytic icterus may accompany infection, but no infection could be demonstrated. The relationship of cold agglutination (auto-agglutination) to acute hemolytic icterus of unknown etiology is not clear. Recently, we observed a case of prolonged hemolytic icterus with auto-agglutination in which splenectomy appeared to effect a cure. In the case under discussion, auto-agglutinins were also demonstrable.

There remains the possibility that the sudden hemolysis might have resulted from transfusion of plasma preoperatively. Blood transfusions were not given.

MEDICO-LEGAL CONFERENCE AND SEMINAR FOR PATHOLOGISTS, MEDICAL EXAMINERS AND CORONERS

October 13-18, 1947

Harvard Medical School, Boston

The Department of Legal Medicine of the medical schools of Harvard, Tufts, and Boston University in association with the Massachusetts Medico-Legal Society will present a six-day program of lectures, conferences, and demonstrations having to do with the investigation of deaths in the interests of public safety. Attendance will be limited to 25 persons who have registered in advance.

Further information may be obtained from the Department of Legal Medicine, 25 Shatauck Street, Boston, Massachusetts.

END OF THE EMIC PROGRAM

In appropriating funds for the EMIC program for the fiscal year July 1, 1947 to June 30, 1948, Congress set a termination date for that program.

Maternity care may be approved only for those expectant mothers whose pregnancy occurred on or before June 30, 1947. However, applications may be made after that date.

Infants of these mothers are eligible for care until their first birthday.

STATE DEPARTMENT OF HEALTH

Walter L. Biering

PREVALENCE OF ROCKY MOUNTAIN SPOTTED FEVER AND TULAREMIA

In this area and in widely separated sections of the United States, the wood tick or common dog tick, *Dermacentor variabilis*, plays a major part in the spread of two diseases during the warm summer month, namely Rocky Mountain spotted fever and tularemia.

Reported Incidence of Spotted Fever

During the three month period from Saturday, May 3, through Saturday, July 26, 1947, cases of Rocky Mountain spotted fever, as reported to the United States Public Health Service for the nation as a whole numbered close to 275. States reporting most cases for the period mentioned were Virginia, Maryland and North Carolina along the Atlantic seaboard; Indiana, Illinois and Oklahoma in the midwest and Wyoming and Idaho in the northwest. Thus far in 1947, reports of three cases of spotted fever have reached the Iowa State Department of Health; two of these cases occurred in Davis county and the third in Scott county.

Reported Incidence of Tularemia

Cases of tularemia, as notified to the United States Public Health Service from all of the states for the months of May, June and July of this year totaled nearly 325. Heading the list of states for these months was Arkansas with more than 70 cases; Oklahoma about 30 cases; Louisiana close to 20, and Illinois and Missouri each about 15 cases. Iowa physicians reported three cases during the period concerned.

The accompanying line graph shows the weekly total of reported cases of Rocky Mountain spotted fever (solid line) and of tularemia (broken line) in the United States for weeks ending Saturday, May 3, through Saturday, July 26, 1947.

Tick Borne Tularemia

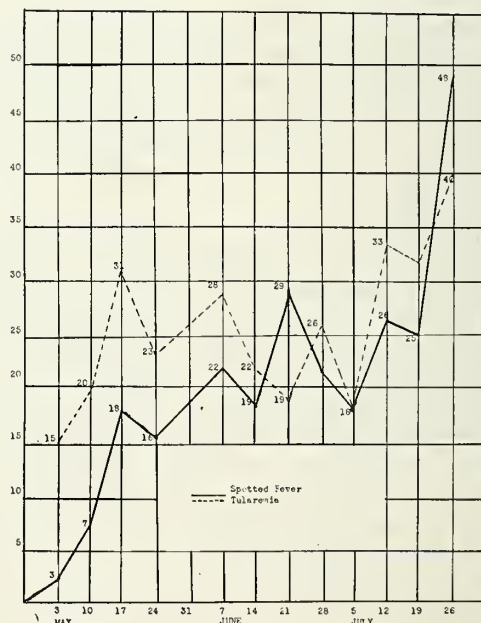
The disease tularemia, literally "tulare in the blood," was so named in 1919 by Edward Francis, M.D., Senior Surgeon, United States Public Health Service, after Tulare county in California

where investigative work on rabbit fever and plague of ground squirrels was carried out.

Months of greatest prevalence of this disease in the midwest are November and December, when those who hunt and dress rabbits are subject to infection through direct contact with these animals. In the summer months, the disease is apt to be acquired through bite of the wood tick or common dog tick. In the western states, the deer fly plays an important part in transmission.

It is known that the wood tick in this area serves as a carrier of *Bacterium tularensis*, the cause of tularemia. Some years ago a tick survey was carried out in Iowa in cooperation with the United States Public Health Service. Ticks from various Iowa counties were shipped to the Rocky Mountain laboratory of the Public Health Service at Hamilton, Mont., where it was demonstrated by means of animal inoculation that some of the ticks from Polk and Iowa counties in Iowa harbored the organism.

ROCKY MOUNTAIN SPOTTED FEVER AND TULAREMIA
IN THE UNITED STATES AS REPORTED TO THE U. S. PUBLIC
HEALTH SERVICE FOR THE MONTHS MAY-JUNE-JULY-1947



Tick borne tularemia is characterized by fever and other symptoms like those of influenza. There is usually a definite history of tick bite with swelling and ulceration at the point of inoculation. Near-by lymph glands are enlarged and tender. Tick bite, nature of illness, presence of ulcer with swollen lymph nodes and absence of rash are signs of this disease. Positive agglutination with serum specimens of the patient aids greatly in confirming diagnosis.

Prevalence of Poliomyelitis

The Division of Public Health Methods of the United States Public Health Service released the following report relative to poliomyelitis for the week ended Aug. 9, 1947.

Reported cases increased from 219 to 279, as compared with an increase from 1,284 to 1,575 during the same week last year. The total to date is 2,235 as compared with 7,025 for the same period last year. Illinois (27 cases) and Nebraska (23) reported the largest numbers during the current week, and only eight states reported an increase of more than 4 cases during the week, as follows: Nebraska 7 to 23, Ohio 7 to 18, Rhode Island 7 to 16, Pennsylvania 10 to 18, Illinois 19 to 27, North Dakota 2 to 8, Kansas 1 to 6, and West Virginia 0 to 5. States reporting the largest number of cases to date are as follows (last year's figures for the corresponding period in parentheses): California 486 (678), New York 161 (293), Illinois 124 (458), Texas 112 (581), and Ohio 81 (180).

A total of 1,623 cases has been reported to date since the seasonal low point, as compared with

6,558 for the same period last year. This year's totals are the lowest since 1942.

CANCER INSTITUTES

The Speakers Bureau of the State Medical Society and the Cancer Division of the State Department of Health are planning a series of Cancer Institutes to be held over the state this fall. Outstanding speakers on cancer are being obtained for these Institutes. The following are tentative places and dates for the meetings:

Ottumwa—Date unknown as yet.

Des Moines—September 23.

Dubuque—September 25.

Council Bluffs—September 30.

Sioux City—October 16.

Fort Dodge—November 4.

Waterloo—November 5.

Mason City—November 11.

Burlington—November 12.

Doctors from the above counties and surrounding counties are invited to attend.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p. m.

*WSUI—Fridays at 11:00 a. m.

September 3- 5 Menopause

Parker K. Hughes, M.D.

September 10-12 New Drugs

D. J. Haines, M.D.

September 17-19 Veterans' Hometown Medical Care Program

R. C. Gutch, M.D.

September 24-25 Not scheduled

*The program which was originally heard over WSUI at 2:45 p.m. is now being broadcast at 11:00 a.m., until the fall schedule comes back on the air.

MORBIDITY REPORT

Disease	July '47	June '47	July '46	Most Cases Reported From
Diphtheria	15	7	14	Hardin, Johnson, Washington, Woodbury
Scarlet Fever	44	54	41	Delaware, Clinton, Des Moines, Woodbury
Typhoid Fever	0	9	0	.....
Smallpox	0	0	2	.....
Measles	269	739	189	Linn, Johnson, Clinton, Muscatine
Whooping Cough	143	187	116	Blackhawk, Cerro Gordo, Dubuque, Woodbury
Brucellosis	119	61	50	Polk, Wayne, Jasper—scattered
Chickenpox	96	279	38	Dubuque, Linn, Blackhawk, Woodbury
German Measles	9	23	1	Dubuque, Washington, Cerro Gordo, Johnson
Influenza	1	0	0	Poweshiek
Malaria	1	0	17	Johnson
Meningitis Men.	4	3	6	Polk
Mumps	27	35	77	Jefferson, Johnson, Mahaska, Muscatine
Pneumonia	1	11	7	Linn, Blackhawk, Woodbury, Mahaska
Poliomyelitis	9	5	45	Boone
Tuberculosis	46	48	69	Woodbury (3), Lee (2), (Fayette, Pottawat-
Gonorrhea	133	96	156	tamie, Wright—each 1)
Syphilis	237	276	132	For the state
Tularemia	3	0	1	For the state
Paratyphoid Fever	2	0	0	For the state
Rocky Mountain Spotted Fever	2	0	0	Appanoose, Delaware, Polk
				Keokuk, Polk
				Appanoose, Davis

The JOURNAL of the Iowa State Medical Society

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Vol. XXXVII SEPTEMBER, 1947 No. 9

Facts Concerning the Administrative Changes in the College of Medicine

Recent articles in the Des Moines *Register* and the Iowa City *Press Citizen* regarding the resignation of Dr. Frank R. Peterson from the College of Medicine have brought into public view the change in procedure inaugurated recently in the medical school. Both newspapers in their original article made the statement that the recommendations stemmed first from a committee appointed by the Iowa State Medical Society, and since that statement is incorrect, it seems advisable for the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY to publish the true facts of the matter so that all physicians in Iowa may be fully informed.

The change-over program has been under discussion at the University for about two years. The president of the University, Mr. Virgil M. Hancher, held many conferences with faculty members and finally asked the dean of the College of Medicine to appoint a committee to formulate a type of program which would help overcome existing difficulties. This committee included Doctors Nathaniel G. Alcock, M. E. Barnes, J. S. Gottlieb, P. J. Leinfelder, E. D. Plass, Dabney H. Kerr, and Fred M. Smith. On Dr. Smith's death, Dr. F. R. Peterson was named to the committee in his place. Of this committee of seven members, five are full-time members of the faculty, two are part-time. In explanation, it should be said that full-time men derived their entire compensation from the University whereas part-time men were permitted to engage in pri-

vate practice to augment their incomes. This privilege was previously denied to all but heads of departments.

There was, understandably, a divergence of opinion in the committee, and it was impossible to arrive at any workable solution. Dr. Henry S. Houghton, former dean of the College of Medicine, was called in to assist. It was his report which formed the basis for the medical service plan which was finally adopted. Both a majority report and a minority report were submitted by the committee, the majority report being essentially the plan proposed by Dr. Houghton.

Action on this plan was taken in the spring of 1946 and the plan itself went into effect in a limited way July 1, 1946, with all part-time members to be included by July 1, 1947. A two year trial period was contemplated.

All of this action took place without any expression either of approval or disapproval, from the Iowa State Medical Society. The officers of the Society were never told officially of the changes being contemplated nor was their opinion asked.

The by-laws of the State Society call for a Committee on Medical Education and Hospitals, and each year the incoming president of the Society appoints such a committee. In April, 1946, the incoming president appointed Dr. George H. Scanlon of Iowa City, Dr. R. F. Birge of Des Moines and Dr. J. V. Treynor of Council Bluffs to serve on this committee. The committee did not meet or function until the early spring of 1947 when it held several meetings to study the situation at Iowa City and bring a report to the House of Delegates at the annual meeting in April, 1947. That committee report was published in full in the July JOURNAL of the Society and the committee's recommendation that no action be taken but that further study be made of the problem was accepted by the House of Delegates.

From a study of the foregoing, it will be seen that the State Society as such has not intervened in any way in the matter. It did not even make a study of the situation until the new program had been in effect for more than six months.

This does not mean, however, that the medical profession has no interest in the matter. Far from it. The profession in the state is too inextricably tied to the College of Medicine to be indifferent about what is happening in Iowa City. Many of the physicians have graduated there; they go back for further instruction; they look to it for help and inspiration. With the Dean of the College of Medicine incapacitated, temporarily, we hope; with no head of the Department of Surgery; with an acting head of the Department of Medicine; with no head of the Department of

Dermatology because of illness—with all of these problems the medical profession is profoundly concerned. A strong and respected medical school is the goal toward which all Iowa doctors would work.

Admittedly, the problem is difficult of solution. There can be no question as to the sincerity of the men bringing in the majority and minority reports. The precedents set by custom and practice in the last hundred years of medical education in this country probably are more in line with the thinking of the minority group. That does not mean, nor do we wish to imply, that the majority report is wrong or that it does not have merit. We do wish to stress, however, that the State Society cannot be indifferent to the problem. No official recommendation has been made and in all probability none will be until much further study has been done which will warrant such a recommendation.

The Nursing Situation

Last year the JOURNAL pointed out problems associated with the acute shortage in nursing personnel in the hospitals of Iowa. All nursing organizations have been active in a nurse enrollment campaign; newspapers have devoted many columns pointing out the advantages of a nurse's education; county medical societies have contributed time and money and the Woman's Auxiliary to the Iowa State Medical Society is actively engaged in interesting young women in the nursing profession. In spite of this, the situation remains critical.

The Iowa State League of Nursing Education undertook a campaign in 1947 costing \$10,000. The Iowa Hospital Association, on Feb. 1, 1947, agreed in a special meeting to finance this campaign through the assessment of each hospital member on the basis of \$1.25 per bed. Only 72 of the 171 hospital members have paid this assessment. Liberal contributions by five county medical societies have left the indebtedness at about \$800. A survey to determine the success of the campaign is to be undertaken this month.

Physicians generally recognize that nursing care is a necessity rather than a luxury. If the hospitals of Iowa are to be able to meet the needs of the communities they serve, further efforts must be made to acquaint young women with the benefits of a nursing education. A step in this direction was made by the Woman's Auxiliary through its presentation of literature on the subject and a motion picture at the Iowa State Fair showing the life and work of a nurse. Young women who are high school graduates or college

students in good standing are eligible to apply for admission to a school of nursing. Applicants should be 18 years of age. Such a course is usually three years in length, although if a girl desires a B.S. degree along with her R.N., it is possible for her to take a five year course at a graduate university school or at a nursing school affiliated with a college or university. Tuition at a hospital school costs approximately \$300 for three years, which includes board, room, laundry and uniforms.

No one is in a better position to explain the advantages of a nursing education than the physicians of Iowa. Theirs is a real opportunity to perform a service by interesting young women in nursing as a profession.

Metapon

The Committee on Drug Addiction of the Division of Medical Science of the National Research Council has sponsored the manufacture by three firms of a new substitute for morphine. This drug, methyldihydromorphinone hydrochloride, has been named metapon hydrochloride and is available only in capsule form for oral administration. The capsules are packaged in bottles of 100, each capsule containing 3 mgm. In accordance with the desires of the National Research Council, metapon is to be distributed for no other purpose than oral administration for chronic pain relief in patients suffering from cancer.

The new drug is recommended as possessing certain advantages such as the absence of nausea and vomiting, absence of mental dullness, and the slow development of tolerance to the drug. Chemically, metapon is a morphine derivative. Its analgesic effect is at least double, and its duration of action is about equal to that of morphine. There is little or no respiratory depression and less mental dullness than produced by morphine.

Preliminary use of this drug has left much to be desired in the treatment of late cancer. However, metapon will prove helpful in the relief of pain of terminal malignancy through oral administration.

Physicians' Part in New Railroad Workers' Program

Of interest to the physicians throughout the state is the fact that the Railroad Retirement Board began the administration of a cash sickness benefit system for railroad workers on a nationwide basis July 1. The benefits, which were added under the 1946 amendments to the Railroad Unemployment Insurance Act, provide par-

tial compensation for wage loss due to disability on the same basis as that due to unemployment.

All disabilities which prevent railroad employees from working, regardless of how or where they occur, are covered under the program. Before claims can be paid, however, a physician's statement of sickness must be submitted. Employees are free to choose their own doctors, and any physician to whom an employee goes for examination or treatment may supply the information required as initial proof of an employee's claim. It is expected that the program will require about 650,000 medical examinations per year.

Medical information will be requested from the doctors on forms known as "Statement of Sickness" and the "Supplemental Doctor's Statement." The first is intended to obtain information at the beginning of each illness, and the second to secure additional data only when such information is needed later on in the same illness. Doctors of medicine alone are authorized to sign statements of sickness with the exception that the superintendent or other supervisory official of a hospital or similar institution may sign the statement if the information furnished on the form is derived from current records of such hospital or institution.

The "Statement of Sickness" on which the medical evidence is to be furnished must be mailed to the appropriate office of the Railroad Retirement Board within seven days after the first day claimed as a day of sickness, or the employee may lose part of his benefits. Claims for succeeding fourteen day periods may be allowed for a predetermined period as indicated by the medical evidence on the doctor's initial statement, but in continuing illnesses supplemental information about the illness may also be requested from the physician.

Each regional office (Atlanta, New York, Cleveland, Chicago, Dallas, Kansas City, Minneapolis, Denver, and San Francisco) has a physician who acts as medical consultant.

EARLY PREPAYMENT PLANS

Little if any thought of what future centuries might bring entered into the thinking of our French Canadian neighbors when they set up prepayment plans for hospital care and doctors' services in the latter part of the seventeenth century. These programs were based on the philosophy of helping their neighbors to help themselves—with a wee bit of self-interest interspersed.

The following is an interesting translation from the French language taken from the archives of the City of Montreal regarding prepaid hospital and medical services, from E. D. Millican, Executive

Director of the Quebec Hospital Service Association of Montreal, Canada. It is significant to note that the medical care plan preceded the hospital service plan over twenty-five years.

March 3, 1655

"Before us, the undersigned, Lambert de Closse, Clerk, and Tabellion of Ville-Marie, on the island of Montreal were personally present:

"Urbain Tessier dit Lavigne . . . 36 others, acting both for themselves and their families and children, of the one part, and

"Etienne Bouchard, Master Surgeon of the said Ville-Marie, of the other part,

"Who, in the presence of the Governor of this Island, have come to the following agreement, namely, that the said Bouchard undertakes and obliges himself to dress and to physic, of all sorts of illness, whether natural or accidental, except the plague of small pox, leprosy, epilepsy and lithotomy or cutting for the stone, until a complete recovery, or as complete as may be possible, in consideration of the sum of 100 sous each year, payable by each of the above mentioned persons, such payment to cover also their wives and children . . . moreover, the said Bouchard shall be at liberty, as shall also be the other parties hereto, to cancel the present agreement at any time and at their discretion giving notice to those concerned. . . .

"Done at the Fort of Ville-Marie, on the said Island, on the 3rd day of March, 1655, where . . . some sign . . . some declare they are unable to sign."

August 20, 1681

"The 20th of August, 1681, before the undersigned Notary, of the Island of Montreal, in New France, and the undersigned witnesses, were present:

"Rev. Mother Renee Le Juneau, Superior of the Dames of Religieuses Hospitalieres de ce lieu, Soeur Marie Morin, Depositary of the hospital, of the one part, and

"Sieur Jean Martinet de Fonblanche and Antoine Forestier, Master Surgeons, residing in this City, who have entered into the following agreement, namely:

"The said Surgeons promise and oblige themselves to well and truly serve the hospital of Ville-Marie, to treat, dress and physic all the sick persons who may be there and this for periods of three months each in turn and to visit such sick persons assiduously at about seven o'clock each morning. and at such other hours as may be necessary and for this and in consideration of the sum or 75 livres each for each year, the time of their service as from the 1st of July last, and upon condition that the said Surgeons cannot claim or seek to recover anything else whatsoever from the said patients nor from the boy who serves the said hospital, either for shaving him or for any other reason and they shall furnish only their own labour and efforts, all remedies to be furnished by the hospital, and moreover, the said Surgeons promise to undertake to visit the said hospital, the one in the absence of the other, when they may be so required. . . ."

NEWS NOTES

from the

Committee on Medical Service and Public Relations

Iowa State Department of Health Division of Tuberculosis Control

The tuberculosis program of the Iowa State Department of Health and the Iowa Tuberculosis Association is built upon the good will of the family physician. We pride ourselves that we have kept this faith since its inception in 1937 and we will continue to do so.

No patient is ever visited without the consent of the family physician, except where his name is not known. If this happens, he is called on immediately after the family indicates who is caring for its members. No x-rays are taken except on those that the physician designates, and all x-ray reports are sent to the doctor, never to the patient directly.

We depend upon the family physician to follow through on all reports sent to him and to complete the diagnosis when necessary. We rarely, if ever, diagnose active tuberculosis from an x-ray film. We suggest certain technics that may be followed merely as a helpful procedure.

The entire program is designed to make it easy for the busy practitioner to have his suspicious cases and contacts x-rayed and a reading of the film returned to him for his further guidance.

It is mandatory by state law to report all cases of tuberculosis directly to the State Department of Health. To facilitate this reporting, new cards were devised and mailed to each physician in the state, together with franked addressed envelopes for their return. The response has been most gratifying.

In 1945, when death certificates were checked against our reported cases on file, 55 per cent were reported for the first time by death certificate. We are pleased to announce that in 1946 only 23.4 per cent were reported for the first time by death certificate, a substantial gain but not as satisfactory as it might be. We hope that eventually we may reduce this to one or two per cent.

All cases reported are set up on a punch-card system which allows us to make quick computations as to cases in each county and in the state as a whole. For the first time in the history of

the state the number of cases reported for each death has come up to statistical standards, i. e., three cases for each death. In 1946 we had 3.7 cases per death, the fifth highest report in the United States for which you as physicians can take a great deal of credit. Also, our mortality rate of 12 deaths per 100,000 population is the fourth lowest in the country.

The reporting of cases is very important as we use these reports to follow up all contacts and in this manner discover other cases more quickly.

There has been a marked difference in the cases found in our x-ray conferences over a few years ago. Then most of the cases were far advanced and moderately advanced tuberculosis, whereas now a large majority of cases are minimal tuberculosis with consequent better chances for early recovery if treatment is instituted at once in a sanatorium.

The recent legislature passed a tuberculosis law which makes free care available to all needing hospitalization who are unable to pay for same without the possibility of having a lien placed on any property which they now have or may have in the future. This bill was approved by the state medical society.

Mention has not been made of the various programs that are being carried on through the state. We feel that their success is due to the fact that they are done on a county-wide basis and that the contact program is followed through each year. In other words, continuity is maintained with all physicians and patients until a diagnosis has been established or the chest is pronounced negative.

Our state is the first in the United States to complete a survey of all state institutions for tuberculosis. Credit must be given to the Board of Control and the State Board of Education, as well as to the superintendents of the various institutions, for their wholehearted cooperation.

The equipment used in our work consists of three mobile tractor-trailer type units and one portable unit. The mobile units are approximately forty-five feet long, equipped with a generator for furnishing power, and contain West-

inghouse x-ray equipment of the latest type for taking 35 mm. miniature films and large 14 x 17 films. All timing is done by means of a Morgan type timer which automatically controls the exposure so that all films taken are of uniform density and will be year after year. The portable unit has a General Electric 4 x 5 and 14 x 17 x-ray machine with generator. This unit can be set up in any building, making for flexibility where it is not practicable to use the mobile unit.

There have been some delays in making reports on x-ray films due to shortage of personnel, both professional and clerical. An assistant to the director is very much needed, but to date we have been unable to fill this position.

The success of the tuberculosis work in the state is due in a large part to the splendid cooperation of the physicians in the various counties. With this spirit of partnership we feel that we can go a long way in eventually eradicating tuberculosis in Iowa.

This is your program. Whatever success is attained depends upon how much you use it.

L. H. Flancker, M.D.

PROPOSED STATE MEETING

Your Committee on Medical Service and Public Relations is planning to hold an all day meeting on October 9, at Hotel Fort Des Moines in Des Moines, to which a representative from each county will be invited. The purpose is to acquaint each county medical society with the work encompassed within the committee. Full details will be published in the October JOURNAL, and all county societies will receive letters shortly asking them to appoint a representative.

Keep the date in mind and plan to come if you are interested. The meeting will be open to all members of the State Society.

Fred Sternagel, M.D., Chairman

THE TRUMAN HEALTH PROGRAM AND THE WAGNER-MURRAY-DINGELL BILL*

The Socialization of Medicine as outlined in the Truman Health Program and the Wagner-Murray-Dingell Bill is a threat to American Democracy. There are many reasons for this statement but two are of great importance.

First: The acceptance of socialized or political medicine by the American Legislators and the American people is a further step in the direction of centralized government, loss of state's rights and the governmental control of the daily lives of the people and can only lead to a federal control of other pro-

fessions and all business endeavor. It seems paradoxical to presume that a free people should ever seriously consider the adoption of such a proposal. It is backed, however, by a great army of social uplifters and job seekers and is being presented to the people with a salesmanship which stresses security, and no mention is made of the fact that sooner or later the taxpayer and the so-called common man will sacrifice his liberty and will become a pawn to be moved here and there by a dictatorial government. When the government has decided who his doctor shall be and how many treatments he may have and has forced him to certify for public record to the diseases which he or his wife may have had in the past, the same government will soon specify his lawyer, his carpenter, his plumber and his vacation periods, if any, and it is likely that there may be few if any leisure hours for the worker if governmental groups can raid his pay check and abstract this or that percentage for this or that purpose. One can foresee, in the present security trends, a people devoid of independence, lacking in initiative and facing to Washington for religious direction and reading government newspapers and listening to government radio programs! Some of our social workers and economists have forgotten that the only worthwhile charity is the charity which makes men and women independent. Creation of dependency in America was never intended when it was written "that all men are created equal." America was born to be the land of opportunity and not the land of dependency! When I speak against the control of medicine by the government I am not thinking of medicine alone but of the sons and daughters of "the free and brave" who are entitled to opportunity and not economic or political slavery.

Second: The great objection to socialized or political medicine as proposed by President Truman and Mr. Wagner, Mr. Murray and Mr. Dingell is the fact that such a program will take from the American people the best medical care in the world and give them in return a type of medical service which is third rate by comparison. There can be no argument against the statement that government control will definitely lower the quality of medical care now available to the American people. In addition, the medical care under federal control will be costly! The most conservative mathematicians estimate the bill at not less than four billions of dollars a year. There are many who feel that the cost will far exceed this estimate. It is safe to say that whatever payroll deduction is made, 4 per cent from employer and 4 per cent from employee, will be doubled or trebled as the list of government employees, who boss the doctor and the patient, grows from an estimated three hundred thousand to a much larger number. Beyond all question of doubt the army of social workers and investigators under the Surgeon General of the United States Public Health Service will in terms of employees and manpower outgrow the peacetime Army and Navy of the United States.

*Taken from "Doctor, U.S.A." by Edward J. McCormick, M.D., chairman of the Council on Medical Service, A.M.A. Complete copy of reprint (Elks Magazine) available upon request through Council Medical Service, A.M.A.

VETERANS ADMINISTRATION

Home Town Medical Care Plan

The Veterans Administration medical plan for Iowa provides neuro-psychiatric hospital treatment at the Veterans Administration Hospital, Knoxville, and general medical and surgical hospitalization at the Veterans Administration Hospital, Des Moines. Medical outpatient treatment and the administrative activity for the Home Town Medical Care Plan are provided by the Medical Division of the Regional Office located in the Valley Bank Building, Des Moines.

The Home Town Medical Care Plan was organized because of the large veteran population (324,000) in Iowa. At the termination of World War II the Veterans Administration realized that it would be impossible to render medical treatment to so large a veteran population through the employment of full-time Veterans Administration physicians alone. Therefore, the various state medical societies were called upon to enter into agreements and contracts with the Veterans Administration to do part of this tremendous volume of medical work. The Home Town Medical Care Plan involves not only ambulatory cases but also hospitalization in private or contract hospitals throughout the state.

In order for a veteran to be eligible for out-patient treatment or hospitalization in a private institution under the Home Town Medical Care Plan, *the disability for which treatment is sought must be service incurred*. Hospitalization in a private or contract hospital can be authorized for the male veteran seeking treatment for a service incurred disability only if: (1) his condition is emergent and there is no bed available for him in a Veterans Administration Hospital, or (2) his illness is of such severity that travel to a Veterans Administration Hospital is precluded.

"Managers of regional offices and centers through Chief Medical Officers or their designates, are empowered to authorize admission to private hospitals, under contract, of women war veterans suffering from nonservice-connected diseases or injuries, as well as service-connected conditions, in a medical emergency or otherwise; provided, that a government facility is not feasibly available; the condition of such beneficiary, if already so hospitalized, will not safely allow of her transfer to a Government facility; or the relative travel involved in admission to a Government facility,

the medical condition existing, or the nature of the treatment required, make it advisable or economical to utilize the contract facility."*

In the event the physician wishes to hospitalize a veteran in a private or contract hospital, it is necessary for him to obtain prior authorization from the Chief Medical Officer, Medical Division, Regional Office, Des Moines, or a professional designate of the Chief Medical Officer. If prior authorization cannot be obtained because of an emergency requiring immediate treatment, it must be obtained not later than seventy-two hours after the patient has been admitted to a private hospital. It will be necessary for the physician to inform the Chief Medical Officer of the veteran's name, his claim number, name of the hospital, date and hour of admission, anticipated length of hospitalization, diagnosis, type of room (private, semi-private or ward), anticipated laboratory work including x-rays, anticipated drugs required, and the possible necessity of a special nurse in which case the doctor must supply the name of the registered nurse.

When a physician requests authorization to render out-patient treatment to an ambulatory patient for a service incurred disability, request for such treatment should be made in advance. "The time limit for mailing the request for authority for treatment for medical care rendered for an emergent condition or a condition not actually emergent but requiring prompt treatment, and additional treatments, if indicated, will be 15 days."

When requests for out-patient treatment reach the office of the Chief Medical Officer, Medical Division, they are carefully screened as to medical and legal eligibility and if such requests meet all the requirements as stated in the foregoing paragraphs and are within the limits of actual need of treatment, such authorizations are issued as expeditiously as possible through the Iowa Medical Service to the physician submitting the request. Veterans Administration regulations provide that authorization for Home Town Medical Care *must be issued on a monthly basis*. When a physician submits a request to render additional out-patient treatment for the following month, on that section of the Iowa Medical Service form which is to be detached and mailed to the Veterans Administration, *it will be necessary for him*

*Veterans Administration Bulletin.

to indicate all current objective findings pertaining to the disability for which he is rendering out-patient treatment as well as the diagnosis.

Most pension examinations are accomplished by private practitioners, the authority going out through Iowa Medical Service. Many of these examinations are returned to the Veterans Administration with only a minimum of medical information and in some instances are not adequate for rating purposes. This necessitates re-accomplishment of the examination. Pension examinations should be accomplished in such a manner as to portray the complete picture of the veteran's disability. They should include all the pertinent subjective history and all the objective findings concerning the disability for which the veteran is being examined, including the veteran's industrial history, since physicians and attorneys in the Veterans Administration must rely solely upon the information provided by the physician on the examination form. In most instances rating board members never come in personal contact with the veteran. Inadequate information on a pension examination might easily result in an unjust reduction of the veteran's pension, creating hardship for the veteran and his dependents that could have been avoided.

Veterans Administration Manual M10-3 requires: "All cases in which the veteran [has been called up for a pension examination and] has not reported within 15 days to a request for his reason for desiring postponement, or to a VA Form 2506, 'Scheduling Inquiry,' or other correspondence pertaining to his examination, or fails to report for examination within 15 days of the scheduling date will be endorsed, 'Failure to Cooperate.' The VA Form 8-2507 will be so endorsed by the Examination Group and will be tallied out and returned with the related correspondence to the appropriate adjudication officer or requesting station." This, in short, means that unless the examination is conducted promptly within the above specified period, the veteran's pension will be stopped. It is therefore necessary not only that the veteran do his part in reporting to his doctor promptly for his examination, but also that the physician submit the examination report as soon as possible upon completion of the examination, preferably in the next outgoing mail.

The Medical Division of the Regional Office is now located in the Valley Bank Building, Des Moines. It is housed on the fifth and sixth floors, although the out-patient clinic is still located in the Veterans Administration Hospital pending the completion of construction of examination rooms and laboratory facilities in the Valley Bank Building.

Eric P. Pfeiffer, M.D.

VA PROGRAM BOTTLENECK

The home town care program of the Veterans Administration and the Iowa State Medical Society is being delayed because there are so few physicians to make neuropsychiatric examinations. If any Iowa doctor would like to do this work, the State Society would be glad to hear from him.

Many physicians did work of this type while in service, and they could render a great service now to veterans by helping with these examinations. A letter is being sent from the central office to each county society secretary asking if he knows of any doctor in his county who might help with this examination. Anyone interested can contact his county secretary or write the central office, giving his experience, and his name will be added to those already making neuropsychiatric examinations.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Board of Trustees

August 14, 1947

The Board of Trustees of the Iowa State Medical Society met in the central office Thursday morning, August 14, with the following persons present: Trustees John I. Marker, Lee R. Woodward and W. A. Sternberg; Assistant Secretary Robert L. Parker; Fred Sternagel of the Committee on Medical Service and Public Relations; and Mrs. Fred Moore, president of the Woman's Auxiliary.

Meeting was called to order by the chairman, Dr. Marker; minutes were read and approved and bills were authorized. Dr. Sternagel presented his committee's plan for a state meeting to acquaint a representative of each county of what the committee is doing. The trustees approved the idea and authorized the committee to pay for a luncheon or dinner, according to the final program, plus the equivalent of round trip coach fare for each representative and state society officer attending.

Enlargement of office space was discussed but action deferred; reports were given on authorizations made at the last meeting; the Woman's Auxiliary program and hopes were presented by Mrs. Moore.

Meeting of the Committee on Medical Service and Public Relations

August 14, 1947

The Committee on Medical Service and Public Relations met in the central office Thursday evening, August 14, with the following persons present: Fred Sternagel, R. D. Bernard, D. C. Conzett, R. C. Gutch, M. I. Olsen and E. E. Shaw of the Committee; President H. A. Spilman; President-elect J. E. Reeder, and Assistant Secretary Robert L. Parker.

The meeting was called to order at six-thirty by Dr. Sternagel, the chairman. He gave a tentative draft of the proposed state meeting program to each member, and this was studied, changes were made, and a final draft approved. Date of the meeting was left to the chairman.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. FRED MOORE, Des Moines

President-elect—MRS. A. G. FELTER, Van Meter

Secretary—MRS. CHARLES A. NICOLL, Panora

Treasurer—MRS. NOBLE IRVING, Des Moines

Dallas-Guthrie Auxiliary Letter

The following letter is a good example of an interested county president. Mrs. H. W. Smith of Woodward, president of Dallas-Guthrie Auxiliary, made an every-member contact by means of this and has outlined a definite plan for the year which will do much toward furthering the objectives of the State and National Auxiliaries and toward maintaining a unified program in her county Auxiliary. We pass on Mrs. Smith's excellent letter as a suggestion and stimulation to other county presidents.

Woodward, Iowa

August 5, 1947

My dear Mrs. Chapler:

I recently attended two meetings of the State Auxiliary Nurse Recruitment Committee at Mrs. Hornaday's home in Des Moines.

Mrs. Fred Moore, our State Auxiliary President, also attended the meetings. She asks that we make the Nurse Recruitment program our special project for this year. Those of you who attended our Dallas-Guthrie Auxiliary meeting at Perry in July will remember that Mrs. Moore challenged our organization to take the lead in this project. I am sure that we shall all want to do our best in accepting this challenge.

At the committee meetings in Des Moines, two points were stressed:

(1) Each of us can work as individuals in our community and collectively in our organization to interest young girls in nurse's training; (2) money should be raised for our nurse's loan fund.

Mrs. Hornaday has names of several high school graduates who want to enter nurses' training schools, but they will require some financial assistance.

You will find in the August issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY an article about the work of the nurse recruitment committee by Mrs. William Hornaday under the title "Meet Your Auxiliary at the Fair." You will find every article in the Woman's Auxiliary News in this issue most interesting and valuable information for all of us.

Another suggestion was brought up at our meetings. Most of us belong to a local Woman's Club. Perhaps we can ask the program committee of our respective clubs to give one program during the year devoted to some phase of health or health education. Perhaps at this particular health program high school girl seniors might be invited as guests to hear a talk about nursing as a profession by a

young nurse or to see the new film that will be shown at the State Fair. There will be literature available later on from our State Auxiliary for us to use.

Let us all be thinking about what we can do to make this project a successful one and bring your ideas to the October meeting.

Too, I shall welcome any suggestions by letter from any of you. Doctor Smith and I are taking a vacation next week and we will be back home by September 15.

Sincerely yours,

Mrs. H. W. (Madeline) Smith, President.

Dallas-Guthrie Auxiliary

The Woman's Auxiliary to the Dallas-Guthrie County Medical Society met with the members' husbands at the Perry Golf and Country Club July 17 hall for a potluck dinner.

ent included Mrs. Fred Moore of Des Moines, state president.

Following the luncheon, the Auxiliary held its meeting on the porch of the Country Club with fifteen members present. Reports from all committees were made, and six members were reinstated and one new member joined.

The treasurer, Mrs. William V. Thornburg of Guthrie Center, reported a balance of \$28.82. The motion was made by Mrs. C. E. Porter and seconded by Mrs. F. A. Wilke that Mrs. H. W. Smith be reimbursed \$4 for rental of the Guthrie Center hall for a potluck dinner.

Members of the nominating committee of 1948 are Mrs. A. G. Felter, chairman; Mrs. C. E. Porter and Mrs. H. J. Clark.

A get-well card was sent to Mrs. C. R. Osborne and a sympathy card to Dr. Richard Brown, Ann Arbor, Mich.

Mrs. J. F. Loosebrock gave a report on the state auxiliary convention held at Des Moines in April. Mrs. Warren reported on the national convention held at Chicago. Mrs. Fred Moore, state president, gave more highlights on the national convention, stressing especially organization, for very little has been done during the war.

Auxiliaries may take it upon themselves as a whole or as individuals to forward work with handicapped children. Many patients are in this way given the opportunity to go to the speech schools

at Iowa City and other suitable institutions.

Following the business meeting a social hour was enjoyed.

Mrs. F. A. Wilke, Secretary

Upper Des Moines Valley Medical Auxiliary

At a business meeting of the Upper Des Moines Valley Medical Society Auxiliary held August 7, 1947, the group reorganized, becoming a member of the state auxiliary. The president, Mrs. G. B. Johnston of Estherville, presided.

It was decided that standard dues of one dollar (50c county, 25c state, 25c national) be required for members of the organization, and that no dues from any one of the four individual counties be assessed in addition.

Discussion on the subject of organizing the counties resulted in a decision that the president appoint county representatives who would plan ways of projecting the work into the county.

Preceding the business meeting, the members (fourteen in all) enjoyed a lake cruise, a gift of the doctors. At the Beach Club (the Inn) the auxiliary held a tea for Mrs. Fred Moore, state president, who gave an informative talk on the auxiliary activities on national, state, and local levels. She urged organization of as many counties as possible and cited examples of very active ones.

Mrs. W. R. Hornaday of Des Moines, chairman of the Nurse Recruitment committee and a past president, showed an official nurse recruitment film available without cost to any organization. She gave a short talk and showed poster material and other publicity available.

Wapello County Meeting

The Wapello County Woman's Auxiliary held its summer social meeting with the doctors July 8 in the form of a picnic at the home of Dr. and Mrs. E. B. Howell of Ottumwa. Forty-six attended, among them being Dr. and Mrs. C. B. Taylor of California, former president of the Iowa State Medical Society and the local auxiliary respectively. Community singing followed the meal.

STATE WOMAN'S AUXILIARY OFFICERS AND COMMITTEE CHAIRMEN

President—Mrs. Fred Moore, 634 40th St., Des Moines 12

President-Elect—Mrs. Allan G. Felter, Van Meter

Vice Presidents:

First—Mrs. John H. Chittum, Wapello

Second—Mrs. Edward H. Sibley, 1619 Grandview, Sioux City

Third—Mrs. Fred A. Rolfs, Aplington

Fourth—Mrs. Max A. Armstrong, Newell

Recording Secretary—Mrs. Charles A. Nicoll, Pannora

Treasurer—Mrs. Noble W. Irving, 4323 Ingersoll Ave., Des Moines

Directors:

Mrs. Jay C. Decker, 722 36th St., Sioux City

Mrs. Soren S. Westly, Manly

Mrs. Marion H. Brinker, 300 S. Maple St., Jefferson

Parliamentarian—Mrs. James A. Downing, 1246 46th St., Des Moines

Chairmen of Standing Committees:

Finance—Mrs. Harold A. Spilman, 103 Oak Wood Ave., Ottumwa

Handicapped Children—Mrs. Marion H. Brinker, 300 S. Maple St., Jefferson

History—Mrs. William A. Seidler, Jamaica

Hygeia—Mrs. John F. Veltman, Winterset

Legislation—Mrs. Robert L. Parker, 3023 Kingman Blvd., Des Moines

Student Nurse Recruitment—Mrs. William R. Hornaday, 612 44th St., Des Moines

National Bulletin—Mrs. Matthew J. Moes, 1975 So. Grandview, Dubuque

Organization—Mrs. John H. Chittum, Wapello

Press and Publicity—Mrs. K. M. Chapler, Dexter

Program—Mrs. Roger M. Minkel, 422 N. 14th St., Fort Dodge

Public Relations and Postwar Planning—Mrs. C. H. Mitchell, 1002 N. Buxton, Indianola

Revisions—Mrs. Elbert T. Warren, Stuart

COUNTY WOMAN'S AUXILIARY OFFICERS

Adair County

President—Mrs. Arthur S. Bowers, Orient

Vice President—Mrs. Albert J. Gantz, Greenfield

Secretary—Mrs. Lewis H. Ahrens, Fontanelle

Treasurer—Mrs. Eugene Tinsman, Orient

Buena Vista County

President—Mrs. Albert G. Gran, 101 Lake St., Storm Lake

Secretary-Treasurer—Mrs. Robert E. Mailliard, 522 Western, Storm Lake

Butler County

President—Mrs. Hugh G. MacLeod, Greene

Vice President—Mrs. Edward M. Mark, Clarksville.

Secretary-Treasurer—Mrs. Bruce V. Anderson, Greene

Dallas-Guthrie County

President—Mrs. Howard W. Smith, Woodward

President-Elect—Mrs. Clarence K. Osborn, Dexter

Secretary—Mrs. Frank A. Wilke, Perry

Treasurer—Mrs. William V. Thornburg, Guthrie Center

Dubuque County

President—Mrs. William A. Henneger, 1790 Custer St., Dubuque

Vice President—Mrs. Horace M. Korn, 1175 Langworthy, Dubuque

Secretary-Treasurer—Mrs. Edwin T. Thorsness, 999 Kirkwood St., Dubuque

Greene County

President—Mrs. Roy E. Parry, Scranton

Vice President—Mrs. Leo C. Nelson, 206 Edgewood Ave., Jefferson

Secretary-Treasurer—Mrs. Marion H. Brinker, 300 S. Maple St., Jefferson

Jackson County

President—Mrs. John W. Jordan, Maquoketa

Secretary-Treasurer—Mrs. Elmer L. Lampe, Bellevue

Continued on page 434)

NOTICE

For the sake of compilation and a knowledge of space coverage, we earnestly request that all material intended for publication in "The Woman's Auxiliary News" be submitted to the chairman and not the State Office not later than the 12th of each month.

MRS. K. M. CHAPLER, Press Chairman

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. WALTER L. BIERRING, Des Moines, Chairman

DR. HENRY G. LANGWORTHY, Dubuque, *Secretary*

DR. CHARLES L. JONES, Gilmore City

DR. CLYDE A. HENRY, Farson

DR. LESTER C. KERN, Waverly

An Ordinance Concerning the University Hospital, Keokuk, Iowa, 1851

JEANNETTE DEAN THROCKMORTON, M.D., Des Moines

The following is extracted from a book in the Historical Department bearing the title "City of Keokuk to the City of Chicago," and contains a chapter on The Revised Ordinances of the City of Keokuk, 1851.

Be it ordained by the city council of the city of Keokuk:

Sec. 1. The Institution erected by said city upon certain grounds granted by the College of Physicians and Surgeons of the Iowa State University, for the purposes of a general Hospital, shall be called the University Hospital, and be subject to the following rules and regulations:

Sec. 2. There shall be appointed by the city Council a Steward or Warden of the said Hospital, who shall hold his office during the pleasure of the Council; he shall reside in the building, in apartments to be designated by the Council for that purpose, and shall receive in addition thereto such compensation as the Council may provide.

Sec. 3. He shall enforce all the police and other rules and regulations of the Institution, and shall receive and transfer all patients in accordance with the direction of the Physician or Surgeon of the Hospital. He shall faithfully carry out the directions of the Physician or Surgeon in respect to the medical treatment, diet and other regulations, which the condition and welfare of the patients may require, and in case of necessity he may employ nurses or assistants, who shall be paid as may be provided by the city Council.

Sec. 4. He shall take particular care that no wine, or spirits shall be used, in the Hospital, except by the direction of the Physician or Surgeon for the use of the patients. He shall see that every department of the Institution is kept perfectly clean; and shall preserve such order and decorum with the inmates as may be directed by the medical attendants. When a person is dangerously ill, and shall request the presence of a

Minister or other religious person, he shall invite the person so desired by the patient, and while such person is present, shall see that the other patients in the ward behave with decorum.

Sec. 5. On the decease of a patient the Warden shall immediately notify the Physician and Surgeon thereof, and shall enter the name and time of the decease of such patient in a register to be kept for that purpose. He shall take charge of such clothes and effects as the deceased may have worn or brought into the Hospital, and shall hold them to be restored to the relatives, on the order of the Physician and Surgeon. On the death of any patient, he shall cause the body to be removed to a room provided for that purpose, and immediately notify the Mayor of the city of the fact.

Sec. 6. He shall not permit persons to pass through the wards of the Hospital, except at such hours as may be designated by the medical attendant, except it shall be the Mayor of the City, a member of the city Council, or a regular practitioner of medicine and surgery residing in the city of Keokuk; and either of the officers or persons above mentioned may give a certificate of permission to any person to visit the Hospital; and when such certificates are presented to the Warden, he shall immediately accompany them throughout the wards, giving such attention and explanations as he may deem necessary and proper.

Sec. 7. In regard to all duties not specified in the preceding sections, he shall be subject to the direction of the Physician and Surgeon.

Sec. 8. Prof. John F. Sanford, M.D., is hereby appointed Physician and Surgeon to the University Hospital during the term of contract with the College of Physicians and Surgeons of the Iowa State University. He shall make such medical and surgical arrangement of the wards as he may deem necessary, with reference to the comfort

of the patients, and the course of clinical instruction which may be arranged by the Faculty of the Medical College, and shall secure such medical services from other Physicians and Surgeons as may be necessary.

Sec. 9. Whenever the interests of the Hospital require it, he may employ a House Physician or Surgeon, whose duties he shall direct. In case of absence or indisposition, he may select any regular Physician and Surgeon to attend in his place, and he shall annually appoint two consulting physicians to attend with him in cases of emergency, whose appointment shall be made public through one or more newspapers of the city: Provided, that such office of consulting physician shall be considered honorary, and the services rendered to the charity patients of the city shall be gratuitous.

Sec. 10. The Physician and Surgeon to the Hospital shall examine all patients who apply for admission either from the township, city, or any other part, and in case they are found proper subjects for admission, shall issue the requisite certificate.

Sec. 11. He shall keep, or cause to be kept, the necessary books for the sick registry, for accounts with patients, and the general accounts of the Institution, and shall report upon the condition of the Hospital at the end of every six months, to the city Council. He shall have the privilege of introducing students of medicine to the clinical and surgical wards, and shall establish such additional rules for the government and order of the Institution as he may deem proper.

Sec. 12. The patients shall conduct themselves with decorum towards each other, the officers of the Hospital, nurses and servants. They shall not smoke tobacco, or play at any game of chance in the Hospital on pain of immediate expulsion therefrom.

Sec. 13. No liquors, provisions, or medicine of any kind shall be furnished to any of the patients by their friends; and no patient shall be permitted the use of any diet prepared in the house, except that which may be ordered or approved by the medical attendant.

Sec. 14. No patient shall be allowed to leave the Hospital while under treatment, except by special permission of the medical attendant.

Sec. 15. Such charity patients as are able, shall give assistance in nursing or otherwise, when required so to do by the attending or resident Physician.

Sec. 16. It shall be the privilege of any patient admitted into the University Hospital, to request the Warden to call in any legitimate practitioner of Medicine or Surgery to consult with the attending physician, and upon such request being made known, it shall be the duty of the Warden to summon the physician desired, to meet the attending physician or his substitute at the regular visit of the latter, or at a specified time, of which the physician in attendance is to be notified.

Sec. 17. All lights, except those necessary for special purposes, are to be extinguished at half past ten o'clock at the latest. No reading in bed at night is to be allowed either by patients, or any person connected with the Institution in any capacity.

Sec. 18. Every patient admitted to the University Hospital shall be required to pay to the Institution a reasonable sum for his expenses therein; to be fixed by the Physician and Surgeon, and to include boarding, nursing and medical attention. And in case patients cannot pay the aforesaid expenses in money, they may be required to do such labor in the house or upon the grounds, equivalent thereto, as may be directed by the physician: Provided, that the Mayor shall have the power to exempt from the requirements of this section any patient who is, in his opinion, a proper object of charity.

Adopted, August 15, 1851.

JOHN A. GRAHAM, Mayor.

SILVER ANNIVERSARY CONFERENCE

Kansas City Southwest Clinical Society

The Annual Fall Clinical Conference will be held in the Municipal Auditorium and the Hotel President, October 6, 7, 8, and 9, 1947.

The list of outstanding guest speakers who will participate in the four day conference can be found on page xxxii of this JOURNAL. These teachers will take part in the general assemblies, round table luncheon question and answer periods, and some of the sectional lecture series.

Five series of sectional group lectures will be presented concurrently the mornings of October 7, 8 and 9. These talks will be concise on problems of interest to physicians in their daily practice, many with patient demonstration. Four of these series will be held in the President Hotel; the fifth in the Little Theatre.

Two round table luncheons will be held daily—one for the medical and the other for the surgical groups. This feature is a part of the scientific program with ample time following the luncheons for the registrants to direct questions to any of the guest speakers—all of whom will attend the luncheon each day.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

DISEASES OF METABOLISM—Detailed Methods of Diagnosis and Treatment, A Text for the Practitioner—Edited by GARFIELD G. DUNCAN, M.D., Director of Medical Division, Pennsylvania Hospital; Clinical Professor of Medicine, Jefferson Medical College, Philadelphia, Pa. With contributions by Walter Bauer, Hugh R. Butt, Abraham Cantarow, Tracy Donald Cuttle, Garfield George Duncan, Frank Alexander Evans, Ferdinand Fetter, Joseph Marchant Hayman, Jr., Martha A. Hunscher, Friedrich Klemperer, Cyril Norman Hugh Long, Perry MacNeal, Edward H. Mason, Max Miller, Louis H. Newburgh, John Punnell Peters, W. D. Robinson, Tom D. Spies, Leandro Maues Tocantins, Abraham White, Alexander W. Winkler. Second edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$12.

DISEASES OF THE CHEST WITH EMPHASIS ON X-RAY DIAGNOSIS—By Eli H. Rubin, M.D., F.A.C.P., F.C.C.P., Attending Physician, Division of Pulmonary Diseases, Montefiore Hospital and Country Sanatorium, New York; Visiting Physician in Tuberculosis and Physician-in-charge, Chest Clinic, Morrisania City Hospital, New York. The Principles of Surgical Treatment—by MORRIS RUBIN, B.A., M.D., Assistant Visiting Surgeon, Triboro Hospital and Morrisania City Hospital, New York; Formerly Chief, Thoracic Surgical Section, Sixty-Ninth General Hospital, Assam, India. W. B. Saunders Company, Philadelphia, 1947. Price, \$12.

GYNECOLOGY with a Section on FEMALE UROLOGY—By Lawrence R. Wharton, Ph.D., M.D., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Assistant Attending Gynecologist, The Johns Hopkins Hospital; Consultant in Gynecology, The Union Memorial Hospital, Hospital for the Women of Maryland, Sinai Hospital and Church Home and Infirmary. Second edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.

A MANUAL OF THE COMMON CONTAGIOUS DISEASES—By Philip Meen Stimson, A.B., M.D., Associate Professor of Clinical Pediatrics, Cornell University Medical College; Visiting Physician, Willard Parker Hospital; Director, Poliomyelitis Service, The Knickerbocker Hospital; Medical Director, The Floating Hospital of St. John's Guild; Associate Attending Pediatrician, The New York Hospital; Consulting Pediatrician, The Meadowbrook, Bergen Pines, and Norwegian Lutheran Hospitals. Fourth edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$4.

A MANUAL OF FRACTURES AND DISLOCATIONS—By Barbara Bartlett Stimson, A. B., M.D., Med. Sc.D., F.A.C.S.; Assistant Professor of Clinical Orthopedic Surgery, College of Physicians and Surgeons, Columbia University, New York City; Associate Attending Surgeon, Presbyterian Hospital and Vanderbilt Clinic, New York City.

Second edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$3.25.

NUTRITIONAL AND VITAMIN THERAPY IN GENERAL PRACTICE—By Edgar S. Gordon, M.D., Ph.D., Associate Professor of Medicine, University of Wisconsin. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.

OFFICE IMMUNOLOGY INCLUDING ALLERGY, A Guide for the General Practitioner—Edited by Marion B. Sulzberger, Professor of Clinical Dermatology and Syphilology and Director New York Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital; and RUDOLF L. BAER, M.D., Instructor in Dermatology and Syphilology, New York Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital. The Year Book Publishers, Inc., Chicago, 1947. Price, \$6.50.

REHABILITATION THROUGH BETTER NUTRITION—University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Alabama; by TOM D. SPIES, M.D., from the Department of Internal Medicine, University of Cincinnati College of Medicine. W. B. Saunders Company, Philadelphia, 1947. Price, \$4.

Rh—ITS RELATION TO CONGENITAL HEMOLYTIC DISEASE AND TO INTRAGROUP TRANSFUSION REACTIONS—By Edith L. Potter, M.D., Ph.D., Assistant Professor of Pathology, Department of Obstetrics and Gynecology, The University of Chicago and the Chicago Lying-in Hospital. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.50.

SURGICAL PATHOLOGY—By William Boyd, M.D., Dipl. Psychiat., M.R.C.P. Edin., F.R.C.P. Lond., LL.D. Sask., M.D., Oslo, F.R.S.C., Professor of Pathology, The University of Toronto. Sixth edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.

A TEXTBOOK OF PATHOLOGY—By E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis, Minn.; Contributors—B. J. Clawson, M.D., Professor of Pathology in the University of Minnesota, and J. S. McCartney, M.D., Associate Professor of Pathology in the University of Minnesota. Sixth edition. Lea & Febiger, Philadelphia, 1947. Price, \$10.

THE 1946 YEAR BOOK OF ENDOCRINOLOGY, METABOLISM AND NUTRITION—Endocrinology edited by WILLARD O. THOMPSON, M.D., Clinical Professor of Medicine, University of Illinois College of Medicine; Attending Physician (Senior Staff), Henrotin Hospital; Attending Physician, Grant Hospital of Chicago; Metabolism and Nutrition edited by TOM D. SPIES, M.D., Associate Professor of Medicine, University of Cincinnati School of Medicine; Director, Nutrition Clinic, Hillman Hospital, Birmingham, Alabama. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.75.

BOOK REVIEWS

Rh—ITS RELATION TO CONGENITAL HEMOLYTIC DISEASE AND TO INTRAGROUP TRANSFUSION REACTIONS

By Edith L. Potter, M.D., Ph.D., Assistant Professor of Pathology, Department of Obstetrics and Gynecology, The University of Chicago and the Chicago Lying-in Hospital. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.50.

This book is the latest of the General Practice Manuals which, although designed for general practitioners, should be of great value to many specialists. There are seven hundred ninety-four references listed in the bibliography.

If we appreciate the fact that the Rh factor was not described until 1939, the need for a book to organize this large amount of material becomes evident. The events leading up to the discovery of Rh are presented, as well as the realization of its

importance in hemolytic disease of the newborn and in blood transfusion reactions. The different types of Rh antigens and the corresponding antibodies whose formation they excite are discussed. The inheritance of Rh is described, together with the tables showing all the possibilities according to the Mendelian Law of Inheritance. The importance of the Rh factor in relation to transfusion reactions is stressed, and the procedures which may be used to prevent them are given. The remainder of the book is devoted to hemolytic disease in the newborn, beginning with its relation to Rh. Excellent photographs illustrating the various types of hemolytic disease are included. The diagnosis, clinical course, and complications are discussed, followed by the latest information on prevention and treatment.

The pathology of hemolytic disease is given in detail, accompanied by excellent gross and microscopic illustrations. The final chapter consists of

technics for Rh determination and the detection of Rh antibodies. This book is very timely and presents in an organized and quite understandable manner a subject which has at times been confusing.

F. C. C.

A TEXTBOOK OF MEDICINE

Edited by Russell L. Cecil, A.B., M.D., Sc.D., Professor of Clinical Medicine, Cornell University Medical College; Consulting Physician, New York and Veterans' Hospitals; Visiting Physician, Bellevue Hospital, New York City; with the assistance of WALSH McDERMOTT, M.D., Associate Professor of Medicine, Cornell University Medical College; HAROLD G. WOLFF, M.D., Associate Professor of Neurology, Cornell University Medical College. Seventh edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.

This is the seventh edition of a textbook of medicine which has for years been considered one of the outstanding authorities in this field. Numerous valuable additions have been contributed covering subjects previously not included. The treatment of a large variety of diseases has been rewritten by new contributors. The various diseases are grouped in a convenient form for reference. This revised edition should prove even more authoritative with respect to medical diseases.

E. M. G.

A TEXTBOOK OF PATHOLOGY

By E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis, Minn.; Contributors—B. J. Clawson, M.D., Professor of Pathology in the University of Minnesota, and J. S. McCartney, M.D., Associate Professor of Pathology in the University of Minnesota. Sixth edition. Lea & Febiger, Philadelphia, 1947. Price, \$10.

To most practitioners of medicine, pathology books seem, and usually are, difficult to read. They tend to be written in monotonous, uninteresting fashion which discourages one from reviewing the pathology of a disease in which he happens to be interested. It seems to the reviewer, however, that in recent years the standards of quality of pathology textbooks have improved. Bell's *Textbook of Pathology* is among those which have aided in elevating these standards. The book is written in a lucid, simple style that is commendable. Frequent revisions have made it even more interesting, thorough and readable. Now in its sixth edition, the book has been largely written by Bell, but it includes contributions by his able associates, B. J. Clawson and J. S. McCartney.

Although intended for use as a textbook by medical students, it is complete enough to serve as a reference volume for the practitioner of medicine.

Illustrations, including many excellent photomicrographs, are numerous. Well selected references are to be found at the end of each section.

The book is especially recommended to those who are interested in kidney diseases. Bell is considered by many to be the outstanding authority on diseases of the kidneys, and any practitioner of medicine dealing in such conditions with any degree of frequency should certainly refer to Bell for basic information on the subject. In his writing on kidney diseases, Bell has always made great effort to explain clinical findings on a pathologic basis, and because his clinicopathologic correlations have always been sound, his contributions to the knowledge of nephritis and related diseases have proved invaluable.

This interest in correlating clinical and pathologic observations is apparent throughout the book and is one of the reasons why the volume has received such wide acceptance.

R. F. B.

THE 1946 YEARBOOK OF PEDIATRICS

Edited by Isaac A. Abt, D.Sc., M.D.; Emeritus Professor Pediatrics, Northwestern University Medical School; Consulting Physician, Children's Memorial Hospital, St. Luke's Hospital and Michael Reese Hospital, Chicago. With collaboration of ARTHUR F. ABT, M.D., Associate Professor of Pediatrics, Northwestern University Medical School; Attending Physician Michael Reese Hospital, Attending Physician, Pediatrics, La Rabida, Jackson Park Sanatorium; Consultant in Pediatrics, Chicago Board of Health, and Consultant in Pediatrics, Great Lakes Naval Hospital, Great Lakes, Illinois. The Yearbook Publishers, Inc., Chicago, 1947. Price, \$3.75.

The 1946 Yearbook of Pediatrics is an exceptionally well written and easily read collection of abstracts. It consists of abstracts of important and interesting articles in the pediatric field published during the past year. The material is effectively organized and classified under the Newborn, Infant Feeding, Infectious Diseases, Endocrinology, etc. The articles are well summarized and the proper references given so that if the reader desires more detailed study of the subject, he may refer to the original article. In addition, the editor appraises each article characteristically which adds materially to the value of the volume.

J. M. S.

Doctors

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SOCIETY PROCEEDINGS

MEETINGS

Iowa and Illinois Central District

Medical Association

The quarterly meeting of the Iowa and Illinois Central District Medical Association will be held September 24 in the Blackhawk Hotel, Davenport. The following program will be presented: 3 p. m.—moving pictures, "Physiology of Anoxia" and "Oxygen Therapy in Heart Disease"; 4 p. m.—speech by Ralph M. Waters, M.D., of the University of Wisconsin Medical School on "Anesthesia in Small Hospitals and Small Communities"; 5 p. m.—speaker unscheduled at time of publication; 6:30 p. m.—dinner; 8 p. m.—speech by Geza de Takats, M.D., of the University of Illinois College of Medicine on "Surgical Treatment of Hypertension."

Linn County

The Linn county Medical Society will meet at Hotel Montrose, Cedar Rapids, September 11. Dr. Henry E. Michelson, Professor of Dermatology at the University of Minnesota will conduct a dermatology clinic at 5 p. m. At 7:30 p. m. following dinner he will speak on "Diagnosis and Treatment of Skin Diseases for the General Practitioner."

Monroe County

On July 17 the Monroe County Medical Society met at the office of Dr. C. N. Hyatt of Albia in memory of Dr. James F. Stafford of Lovilia who died July 5, 1947. The group extended sympathy to the bereaved family.

Poweshiek County

The Poweshiek County Medical Society met at Community Hospital, Grinnell, August 12 at 7:30 p. m. Dr. Robert L. Jackson of the State University of Iowa Department of Pediatrics will address the group on "Rheumatic Fever."

Scott County

The annual picnic of the Scott County Medical Society was held August 6 at the Dr. J. R. Shorey Farm. Trap shooting provided the afternoon's recreation, and supper was served at 6 o'clock. Dr. T. W. McMeans served as general chairman.

Upper Des Moines Valley Medical Society

The Upper Des Moines Valley Medical Society held its annual summer meeting at The Inn on West Okoboji Lake August 7. Speakers and their

topics were: Dr. R. H. McBride, Sioux City, "Pediatric Problems in General Practice"; Dr. L. E. January, Department of Internal Medicine of the State University, "Congenital Heart Disease"; Dr. F. L. Knowles, Fort Dodge, "Fractures Involving Joints"; Dr. F. E. Coburn, Department of Psychiatry of the State University, "Psychosomatic Problems in General Practice", Dr. Thomas J. Dry of the Mayo Clinic, "Treatment of Congestive Heart Disease." Dr. Dry conducted a clinic at the Spirit Lake Hospital the following day on various types of heart cases.

PERSONALS

Dr. Lyle J. Bailey has become associated with Dr. Harry L. Pitluck of Laurens in the practice of medicine. Dr. Bailey, a graduate of the State University of Iowa College of Medicine with the class of 1928, has been engaged in the practice of general surgery on the west coast for the last seventeen years.

Dr. Walter M. Block recently completed a one and a half years' pediatric training course at the Children's Hospital, Iowa City, and is now serving a six months' residency in pediatrics at the Children's Hospital, University of Cincinnati, Cincinnati, Ohio. He plans to return to Iowa to practice in January, 1948.

Dr. Clyde L. Boice recently was discharged from the navy with the rank of lieutenant commander following five years' service, the past year and a half having been resident in radiology at the Naval Hospital, Oakland, Calif. He has located in Palo Alto, Calif., where he will be associated with Dr. Robert A. Powers, radiologist.

Dr. Kenneth Gee of Shenandoah was guest speaker at the regular meeting of the Rotary Club of that city July 22. His subject was "Development of Penicillin."

Dr. M. E. Henslin of LeRoy, Minn., became associated with Dr. William A. Bockoven in the practice of medicine in July. Dr. Henslin is a graduate of the University of Minnesota and served five years in the Medical Corps.

Dr. Edward S. Murray has completed research work in Nicaragua for the Harvard Medical School of Public Health and is returning to his position on the faculty there. Dr. Murray ran tests of an un-

disclosed nature on men employed in a gold mine at Bonanza and inspected hospitals in Costa Rica and Honduras.

Dr. E. A. Nash of Ottumwa left August 14 for Southampton, England. He plans to tour that country and Scotland, among other activities visiting medical clinics in London and Edinburgh.

Dr. W. M. Page of Lake City has purchased the practice and equipment of the late Dr. J. L. Ravitts of Montezuma.

Dr. Harold E. Sauer has become associated with Dr. J. J. Stegman of Marshalltown in the general practice of medicine. Dr. Sauer served a residency at the Iowa Methodist Hospital, Des Moines, from October, 1946, to June, 1947, prior to which he was in the Army Medical Corps.

Dr. John W. Schutter opened offices in Algona July 21. A graduate of the State University of Iowa College of Medicine, Dr. Schutter interned in Phoenix, Ariz., served in the army three years, took a short course at the University of Illinois then joined Drs. Beatty and Keeney in the practice of medicine in Mallard before starting private practice.

Dr. W. T. Webb of Fairfield has purchased a home and office space in Bonaparte where he plans to move in the near future. He has been in Fairfield twenty-three years.

DEATH NOTICES

Carrington, William John, aged 63, died July 24 at his home in Clinton following several months' illness. Colonel Carrington practiced medicine in Atlantic City, N. J., for 35 years before entering the Army Medical Corps in 1943, when he was appointed head of surgical service at Schick Hospital, Clinton.

De Witt, Franklin Thompson, aged 83, died July 3 at his home in Nemaha following a lingering illness. A graduate of the College of Physicians and Surgeons, Keokuk, with the class of 1896, Dr. Thompson was a life member of the Sac County and Iowa State Medical Societies.

Lambach, Frederic, of Davenport, aged 81, died August 7 in Mercy Hospital of that city following a brief illness. Dr. Lambach practiced fifty-six years before retiring July 1, 1943. He was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1897, and was a life member of the Scott County and Iowa State Medical Societies.

Phillips, Jesse Henley, of Montezuma, aged 95, died July 30 at his home. He was graduated from

the Hahnemann Medical College and Hospital, Chicago, in 1897, practicing in New Sharon before coming to Montezuma in 1916. Dr. Phillips was a life member of the Poweshiek County and Iowa State Medical Societies.

Wailles, John Wesley, aged 82, of Davis City, died August 1 in the Leon Hospital where he had been a patient since September, 1945. Dr. Wailles, a graduate of the College of Physicians and Surgeons, Keokuk, in 1891, was a life member of the Decatur County and Iowa State Medical Societies.

COUNTY WOMAN'S AUXILIARY OFFICERS

(Continued from page 428)

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ACUTE APPENDICITIS

I. S. Ravdin, M.D., Philadelphia, Pa.

Sixty-one years ago Reginald Fitz¹ gave new insight to the problem of right lower quadrant suppuration. A year later on Apr. 27, 1887, Thomas G. Morton² of Philadelphia did the first successful operation for appendicitis, deliberately undertaken with an alternative diagnosis of disease of the organ. Sands³ of New York on Dec. 30, 1887, operated on a patient upon whom Dr. Simon Baruch had made the uncompromising diagnosis of perforation of the appendix. This patient also survived.

John B. Deaver⁴ has very clearly outlined the early history of this subject in our country. He referred to the differences of opinion which existed in regard to the treatment of appendicitis as follows: "Not only was the controversy as to the surgical or nonsurgical treatment of appendicitis the occasion for unpleasant personalities, that were as galling as they were undignified and unjust, but it was the cause of bitter enmities that often persisted during a whole lifetime. From the beginning of my recognition of the importance of the potential mischief resident in the appendix, I was one of the ardent advocates for its removal in acute cases of inflammatory disease of the organ, and later also for its routine removal in many diseases of other abdominal viscera. Arrayed with me on the affirmative side of the question were men like Morton, Pepper, Osler, the two Prices of this city, Maurice Richardson, John Murphy, and others who have passed on to their reward; and still others, McBurney, Keen, the Mayos, Oshoner and many more who are happily still keeping alive the good name of surgery in America.

"Prominent among contemporary opponents to early operation treatment of appendicitis was Nicholas Senn, who on one occasion at a meeting of the American Medical Association did me

the honor of declaring in public that a surgeon holding the views I was advocating was so questionable an ornament to the profession that he ought to be deprived of his privileges and of his diploma. My answer to his insinuation, I am afraid, was about as flattering to my denouncer as was his accusation to me. A few days after Dr. Senn's arrival home he wrote me: 'While we fight like bulls within the arena, behind the scenes we are peaceful lambs; I am very anxious to have you address the Senn Festschrift Medical Society.' This is by no means an extreme nor an isolated example of bitterness that marked the stormy controversy at its height. But the atmosphere has been clearer since those days, and the primary question no longer is whether to operate but rather when and perhaps how to operate."

With the mastery which only a genius can have, Fitz¹ showed conclusively that typhlitis, perityphlitis and paratyphlitis were rare lesions while appendicitis was a common one. Koch's⁵ discovery of the tubercle bacillus was still fresh in the minds of everyone. The Klebs-Löffler bacillus had not as yet been discovered. The tetanus bacillus and the plasmodium malariae had not been described, nor the cause of yellow fever even suspected. Operations for the removal of brain tumors had just been attempted, and the surgery of hyperthyroidism was in its infancy. Cholecystectomy was still a very rarely performed operation. In fact, the era of aseptic surgery was just beginning; even antiseptic surgery was not as yet accepted by many well-known surgeons of the time.

However, during this period of a nearly magic realignment in medicine and surgery the problems of acute suppurative appendicitis remained at least in part unsolved and to an extent unconquered.

Only recently has the mortality of operations for acute appendicitis and its sequelae shown a sharp decline. During 1947 the Metropolitan Life Insurance Company had a decline of more than 70 per cent in deaths of policy holders from acute appendicitis.

From the Surgical Clinic of the Hospital of the University of Pennsylvania and the Harrison Department of Surgical Research, Schools of Medicine, University of Pennsylvania, Philadelphia, Pa.
Presented at the Ninety-Sixth Annual Meeting of the Iowa State Medical Society in Des Moines April 16, 17 and 18, 1947.

In 1914 John B. Murphy⁶ stated that the mortality of acute appendicitis in the best hospitals of our country was far too high. A year later Haggard⁷ agreed with Murphy when he stated that "hospital reports for the past year show that the average mortality in appendicitis in all stages of the disease in those reported hospitals is about 20 per cent." A decade later A. Murat Willis⁸ from a study of vital statistics called our attention to the increase in the mortality of operations for appendicitis after World War I. John Bower⁹ has published several reports on the mortality from acute appendicitis in twenty-eight hospitals of Philadelphia; 5.97 per cent in 1928-1929, 4.81 per cent in 1930, 4.39 per cent in 1931, 3.44 per cent in 1932, 3.54 per cent in 1933, and in the sixth and last survey in 1938 the mortality was 2.44 per cent.

A. Bradford Hill¹⁰ in his monograph on "The Principles of Medical Statistics," which was published a few years ago, seriously questions the statistical methods used in many of the studies which have been made and Bower's reports in particular. He says: "For example, in a group of American hospitals it has been reported that the fatality rate from appendicitis declined from 6 per cent in 1928 to 3.5 per cent in 1932. Is that a 'real' decline or has there been a concurrent change in the types of patients admitted? Examination of the basic figures shows that in these hospitals in 1928 some 2,500 patients were operated upon, while in 1932 the number had risen to 3,500, an increase of 40 per cent. It is impossible to believe that an increase of 40 per cent in five years is a real increase in the incidence of appendicitis."

It would seem that at this time the mortality of operations for acute appendicitis of all types, the most common surgical lesion in the abdomen, should be approaching the vanishing point, and yet we must admit, not without shame, that we still have not reached this objective regardless of the manner in which statistical data have been compiled.

What are the problems which we must face if the present situation is to be remedied? It can be said with some assurance that the mortality in acute appendicitis will bear a direct relation to the number of cases of peritonitis present in a given series. The mortality of simple uncomplicated acute appendicitis is low in nearly every well conducted hospital.

Astley P. C. Ashhurst¹¹ once said, "There is not or should not be any problem in simple acute appendicitis. The problems of acute appendicitis are the problems of its complications." These

have to do with gangrene, perforation, spreading infection and intestinal obstruction. It is generally agreed that two important factors contributing to these complications and the present high death rate are delay in operation and catharsis.

There are three factors which may delay operation: (1) failure of the patient to consult his physician; (2) failure of the physician to diagnose the lesion; and (3) procrastination by the physician once the lesion has been diagnosed. Willis⁸ has very aptly stated that "provided a good hospital and a capable surgeon are available and a diagnosis of acute appendicitis has been made, prompt operation is the treatment."

The diagnosis of acute appendicitis is not always a simple matter, and this is especially true in the young and the aged. Too often the physician delays operation awaiting a textbook picture and consults the surgeon only when perforation has occurred. The symptoms of acute appendicitis will continue to vary as long as the virulence of the infection varies and as long as the quantitative reaction to infection varies in different individuals. Few patients are lost as a result of operation when exploratory laparotomy has disclosed an error in the diagnosis, but many lives are lost each day because of the failure to diagnose an existing acute appendicitis. Not more than 50 per cent of patients of all ages present a textbook picture of the disease. In the remaining 50 per cent the diagnosis must often be made by exclusion, and exploration is safer than delay. In youth and old age accurate preoperative diagnosis may be most difficult, and laparotomy must be accepted as necessary. I agree with Barrow¹² that if the diagnosis of acute appendicitis is not verified, "Exploratory laparotomy in these patients was a matter of inconvenience, not of danger."

Purgation is still all too frequently practiced not only by the laity but by the practitioner as well. Much as we would like to place the sole blame for the continuance of this ill advised procedure on the lay group, we must admit that too many of the patients whom we see with spreading peritonitis of appendicular origin received their purgative on the advice of their physician.

If these statements be true, the high mortality associated with acute appendicitis in which the infection has spread beyond the confines of the appendix is a reflection first on our lack of civic interest in not more vigorously disseminating the information to the public on the dangers of abdominal pain and catharsis at all ages, on the ability of the attending physician properly to diagnose the condition and to seek the advice of a

surgeon when the slightest doubt exists. Dr. Heald of your society pointed this out fourteen years ago.

There is no medical treatment for acute appendicitis. An ice bag placed on the abdominal wall in no wise influences the degree or state of the inflammation since the cold penetrates only a small portion of the abdominal wall. Acute appendicitis is, therefore, from its inception a surgical lesion; and if for some reason an attempt is made to delay operation, the responsibility should be shared with someone who is daily associated with the problems which the lesion presents.

There can be no doubt that the well trained surgeon is today better equipped than ever to meet the problems which acute appendicitis presents, but too often the patient falls into the hands of operators with only limited training and experience. While such men may be competent to operate on uncomplicated cases, patients suffering with local, diffuse or spreading peritonitis should be afforded the judgment and skill of qualified surgeons.

That the mortality in acute appendicitis, with or without peritonitis or abscess, can be reduced if careful attention is given to the various details of preoperative preparation, the selection of the proper time for operation, the judicious use of anesthesia, the careful planning and conduct of the operation and exacting postoperative therapy can hardly be doubted. We have in the Hospital of the University of Pennsylvania operated on a consecutive series of 1,918 patients since 1936 with acute diffuse appendicitis, gangrene, abscess or acute appendicitis with local or spreading peritonitis with a mortality of 0.46 per cent. That considerable credit belongs to the intern and resident staff is without question since every member of the team looks upon a death from appendicitis as a personal defeat.

We make no attempt to classify the types of peritonitis which are present in our patients. It is difficult at times even at the operating table to determine the exact extent of the spreading process unless one violates the fundamental principles of good surgical practice. The surgeon should, in my opinion, never during the antemortem period diagnose a lesion as generalized peritonitis. This is an autopsy diagnosis and the surgeon who attempts to determine the extent of the infection at the operating table is playing with the life of his patient. Turbid fluid does not necessarily mean that a spreading peritonitis exists; the rich emulsion of leukocytes is often protective rather than harmful. On the other hand, perforation is not necessary for the presence of peritonitis. The difference between peritonitis

from a nonperforated and a perforated appendix is one of degree. In the latter gross soiling occurs in a very brief period. Of the 1,918 patients I am reporting which have been operated upon, 188 had a gross perforation of the appendix. The mortality in this group was 2.6 per cent.

The many papers constantly appearing in surgical literature on acute appendicitis and its complications demonstrates that there is a lack of harmony concerning the appropriate treatment of this condition. Does not this failure to adopt sound and proven surgical principles in the treatment of this disease account for the fact that below the age of 45 more people in this country die annually from appendicitis than from all forms of malignancy. Bower, Burns and Mengle¹³ have estimated that 15,000 or more patients die from appendiceal peritonitis in this country every year.

In the entire series certain fundamental principles of therapy have been maintained. For some years we have, with a few exceptions, operated on all patients with acute appendicitis, or acute appendicitis with peritonitis within a few hours of admission to the hospital. The exceptions are those patients with appendiceal abscess and those with evidences of a very widespread infection, ileus and a failing circulation. The delayed method of treatment has increasingly played a less important rôle on our service during the past seventeen years.

Spinal anesthesia has been used in nearly all adults, while the anesthetic for children has in the main been ether anesthesia. Spinal anesthesia provides a degree of relaxation rarely obtained with other anesthetics unless curare-like substances are used; relaxation minimizes trauma from retraction and decreases the need of many pads, thus preventing the spreading of the infection during operative manipulation.

We believe that the incision of choice in operations for all types of acute appendicitis is the muscle-splitting incision. It provides direct access to the cecum and appendix and if properly made, following a careful physical examination, least disturbs the coils of small bowel and the omentum which are helping to localize the infection. As the late Mont Reid said, "The death rate is lower in those cities where the McBurney incision is most widely used." The muscle-splitting or McBurney incision can with ease be converted into the muscle cutting incision suggested by Saint¹⁴ should a more liberal exposure be found necessary. Foolish is the surgeon who fails to make the exposure more adequate and thus prolong the operation. This is especially true in the gangrenous retrocecal appendix.

We believe that except where the appendix forms a part of an abscess it should be removed. The practice proposed by Bower¹⁵ of putting drainage into the free peritoneal cavity and leaving a gangrenous perforated appendix behind is not based on sound surgical principles. Regardless of whether the patient receives "one" or "two" doses of antigen which Bower says he does when the appendix is manipulated, a gangrenous appendix should be removed. It provides fertile soil for bacterial multiplication and toxin formation.

Drainage is not always necessary even in peritonitis. When necrotic exudate is not present either on the bowel adjacent to the perforation or on the parietal peritoneum adjacent to the appendix, little is gained by drainage. We carefully aspirate purulent fluid from the pelvis and occasionally drain it, but each succeeding year finds us placing less reliance on drainage. When this is necessary the McBurney incision permits the placing of drains in contact with the lateral parietal peritoneum so that the chances of intestinal obstruction are minimized. Since the routine use of suction drainage in 1933 as described by Wangenstein and Paine¹⁶ we have had to do but two ileostomies.

Gastric suction drainage with a short tube or jejunioileal drainage with a long tube is, I believe, of major importance in these patients. Abdominal distention can be controlled and its deleterious effect on the circulation and respiration is prevented. The necessary sodium chloride is more readily calculated. It is amazing to see the Miller-Abbott tube pass down into the ileum, even when paralytic ileus has been diagnosed. In a number of desperately ill cases with large perforations at the base of the appendix we have placed a rubber catheter into the cecum through the appendiceal stump. If this is done, distention of the colon is not encountered.

Fluid and salt balance are controlled by intravenous therapy. Care is taken that too much sodium chloride is not administered, for edema increases the incidence of pulmonary complications and delays intestinal motility.

Blood transfusions are used for support of the circulation and every effort is made to prevent peripheral vascular collapse. In the presence of marked ileus the reduction in the circulating blood volume may be great. A single transfusion of 500 cc. of blood is inadequate if the plasma volume has been decreased by 30 per cent. Oxygen is given by intranasal tube as soon as any cyanosis of the fingernail beds becomes evident.

In 1936 we¹⁷ added to the regimen previously described the parenteral administration of sulfa-

nilamide, and in 1940 we began the use of the peritoneal implantation of sulfanilamide in all instances of appendiceal peritonitis as suggested by Mueller¹⁸ and by Thompson and his associates.¹⁹

The results were gratifying, and we are convinced that a number of lives of desperately sick patients have been saved. The progressive improvement in the mortality rates reported from a number of surgical clinics during the past seven years is in part associated with the use of chemotherapy as an adjunct to operation and other methods of care. At present the following therapy is being used in patients with peritonitis. At the time of appendectomy and subsequent to aspiration of the pelvis, 5.0 grams of crystalline sulfanilamide are placed in the peritoneum. Immediately after operation penicillin-streptomycin therapy is begun. From 500,000 to 800,000 units of penicillin are given every 24 hours and from 2.0 to 4.0 grams of streptomycin, all such therapy being given in divided doses. The antibiotics are being used because work being done in the Harrison Department of Surgical Research has shown that such therapy is more efficient than is the continuation of sulfonamide therapy. Certain it is that chemotherapy and antibiotic therapy will often assist in the control of what initially appeared to be a fatal lesion. They perhaps reduce greatly the number of organisms that the peritoneum must take care of before the tide turns toward recovery.

When the progress of the patient is not satisfactory we believe that one should look carefully to the abdomen for the explanation. Early x-ray for a subdiaphragmatic collection and early institution of drainage if one is found has saved many patients' lives, while failure to realize its presence has been the cause of many fatalities.

In residual pelvic collections we are much more temperate. Drainage is, as a rule, not instituted until the abscess can be palpated above Poupart's ligament or presents well down in the rectum. The simple daily septic rise and fall in the temperature is not in itself cause for early exploration.

Summary

Of the greatest importance is eternal vigilance on the part of the surgical and nursing staff. It is often a relatively simple matter early to control an impending catastrophe and often impossible to control it by any means once the process has become widespread. It is for this reason that I do not believe in the so-called standardized postoperative regimens. Each patient must be looked upon as presenting an individual problem and the surgeon and his staff be ever alert to the

possibilities which the individual patient may present. If this can be done it is often possible to save a patient that initially appeared to be a certain fatality.

As long as the human factor must be considered, we cannot ever expect to have all our patients with acute appendicitis sent to us in the early stages of the disease. We as surgeons can, however, by careful attention to the factors which are known further to extend the now generally high morbidity and mortality pave the way for an improvement in the results now being obtained.

The use of accessory therapeutic agents, if proved advantageous, is advisable. We believe that at present the sulfonamides, penicillin and streptomycin are the most effective bacteriostatic agents available in spreading peritoneal infections. Under no conditions, however, must we believe that any accessory method of treatment can take the place of early operation and skillful surgical treatment, but late operation is often necessary and it is in such desperately ill patients that accessory therapeutic agents can still further reduce the mortality of this disease.

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SYMPTOMS OF RENAL STONE

Rubin H. Flocks, M.D., Iowa City

The Symptoms of Renal Stone

Renal stone is common—one of every 330 patients admitted to the University Hospitals during the period 1941-1945 had a renal stone. Table 1 shows the presenting symptoms in the 282 patients with renal stone who were seen here during this period. As may easily be seen, they may indicate any lesion in the urinary tract and are not at all pathognomonic of renal stone. Pain, which is the most frequent symptom, occurred in less than half of the cases. Moreover, many of these symptoms appeared after so much irreparable damage had occurred that treatment was of little avail. Because of this fact, it is important to make as early a diagnosis of renal stone as is possible. It is the purpose of this report to review the symptomatology of a representative group of patients with renal calculi to see what needs to be done to make such an earlier diagnosis.

TABLE I
PRESENTING SYMPTOMS IN 282 PATIENTS WITH
RENAL STONE

Renal colic	131
Aching in right flank of abdomen.....	108
Hematuria	101
Pyuria	49
Chills and fever.....	87
Bladder irritation.....	77
Passage of stone.....	67
Nausea and vomiting.....	74
Weight loss, weakness, fatigue.....	21
No symptoms at all.....	13
Anuria	6
Uremia	4
Mass in region of kidney.....	9
Symptom of vesical neck obstruction.....	14
Upper tract fistula.....	6

The mechanisms of the production of symptoms when renal stone is present are diagrammatically shown in Figures 1 and 2. They consist essentially of the following: (a) the stone may produce obstruction to some portion of the urinary passageway, and (b) the stone may irritate some portion of the urinary passageway. When it obstructs some portion of the urinary passageway it will cause pain and predispose to the occurrence of infection. If it is bilateral it will produce renal insufficiency. Therefore, the symptoms due to this one fact may be either pain, pain and evidence of infection, or the symptoms of renal insufficiency. The pain may be referred or may cause reflex spasm elsewhere and thus produce symptoms pointing away from the affected kidney. In addition, the irritation produced by the stone as it moves around in the kidney pelvis may produce hematuria even though obstruction is not present. In summary, the symptoms which stone in the kidney produces are: hematuria, pain, evi-

SYMPTOMS OF RENAL STONE

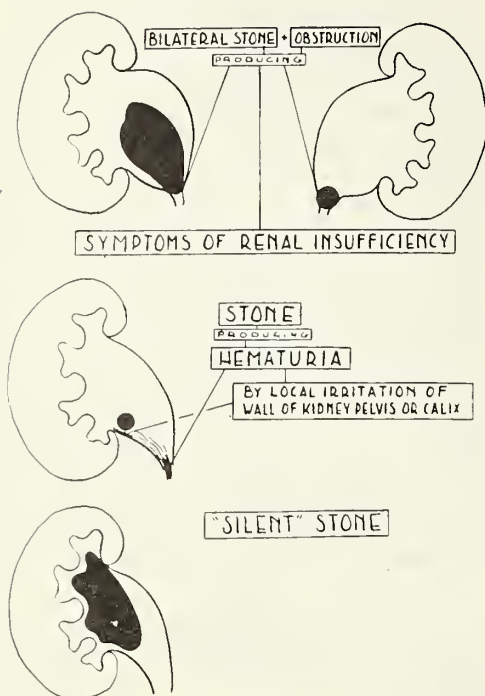


Figure 1

dence of obstruction, evidence of renal insufficiency, evidence of renal infection, or it may produce no symptoms at all for a time. These vary definitely with the type of stone and with the type of etiologic and pathogenic factors which have produced the stone. They vary also with the results of the stone's presence in the kidney (Table 2).

TABLE II
RELATIVE INCIDENCE OF SYMPTOMS ASSOCIATED
WITH DIFFERENT TYPES OF STONE

Symptom	Uric Acid	Oxalate	Phosphatic	Cystine
Hematuria	++	++	++	++
Pain	++	++	++	++
Renal obstruction ...	++	++	++	++
Renal infection	++	++	++	++
Renal insufficiency...	++	++	++	++
Almost no symptoms.		++	++	++

Uric Acid Stone: A uric acid stone grows slowly. Therefore, when first recognized it usually is a very small stone. Although it may be present without giving symptoms for a long period of time, this is usually not a source of danger to the kidney since a uric acid stone grows so slowly. Usually it moves about and produces either pain or hematuria, or evidence of obstruction before it has grown to large size and before it has produced renal damage. It is a non-radiopaque stone and, therefore, is recognized as a filling defect in the pyelograms or by the fact that it produces obstruction and therefore produces a disturbance of function on the excretory

pyelogram of one kidney or the other. On an air pyelogram it produces a negative filling defect.

Oxalate Stone: The situation with regard to oxalate stone is essentially the same as that with uric acid stone, differing only with regard to the x-ray findings. It is opaque to the x-ray.

Cystine and Phosphatic Stones: In contrast, the outstanding fact in regard to cystine and calcium phosphate stones is their rapid growth. Any lengthy period of growth of these stones without the presence of symptoms may be of extreme importance to the patient, since without any warning to him extensive renal damage and such marked growth of the stone may occur that its removal at a later date becomes very difficult. These types of stone may produce the same kind of symptoms as uric acid and oxalate stones except that calcium phosphate stone is frequently associated with infection and therefore at times the outstanding symptoms may be those of renal infection. On the other hand, they very frequently produce no signs or symptoms while undergoing rapid growth.

Since these two types of stones grow so rapidly and may produce so much damage even during a period when no symptoms are produced, predisposing factors which may lead to these kinds

SYMPTOMS OF RENAL STONE

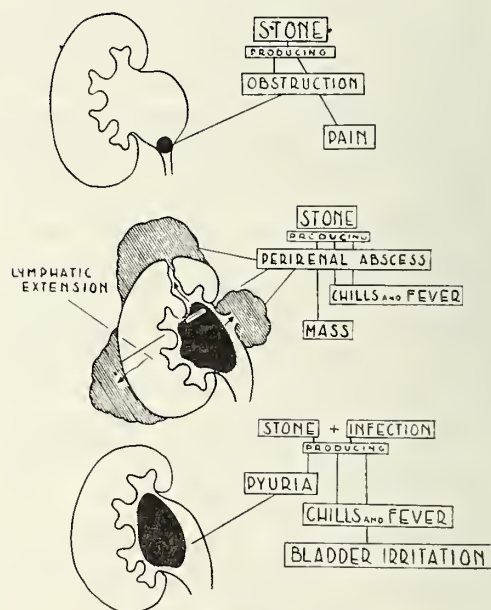


Figure 2

of stones must be understood and recognized as soon as possible. The predisposing factors leading to the formation of cystine stones are shown in Table 3, and the predisposing factors leading to the formation of phosphate stones are shown in Table 4. Anyone who has cystinuria must be

studied routinely at regular intervals for the possible presence of cystine stone. Anyone who has or has had any one of a combination of the predisposing factors leading to phosphatic stone must be studied routinely by means of plain films and pyelograms even though none of the other five symptoms of renal stone are present.

Abstracts of Cases

Case 1. (Fig. 3) A 30 year old white male was admitted to the hospital on Dec. 9, 1937, complaining of severe pain in the right kidney region of nine days' duration, accompanied by nausea and vomiting and some burning on urination. Five months previously the patient had fractured the lower lumbar vertebrae and left femur, and suffered a transverse myelitis. He developed retention of urine and a severe urinary tract infection which required an indwelling catheter for six weeks. By that time he had developed an automatic bladder and was urinating quite satisfactorily. The urine, however, remained cloudy.

the ureteropelvic junction on the right side. On Dec. 15, 1937, the stone was removed by means of a right pelviolithotomy. Intensive forcing of fluids cleared up the urinary tract infection. A check-up examination in 1940 showed both kidneys to be essentially normal and the urine to be negative.

This case illustrates the occurrence of stone following the presence of several predisposing factors. It illustrates the onset of acute pain and evidences of infection many months after the stone has formed.

Case 2. (Fig. 4) This illustrates what few symptoms and signs may be present in the face of an extensive renal destruction by calcium phosphate stone.

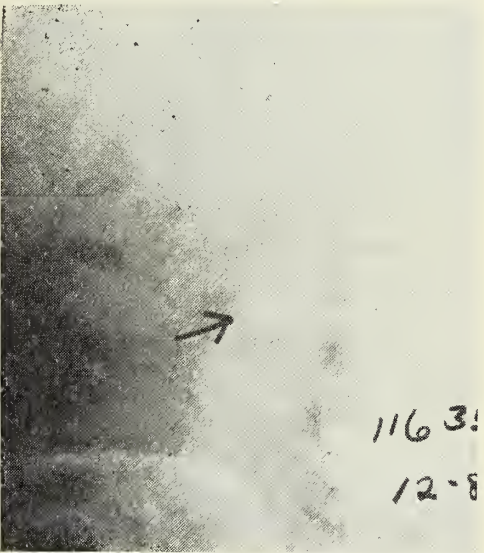


Figure 3

Nine days prior to his admission he began to have chills and fever and attacks of pain in the right side, followed by nausea and vomiting.

On physical examination at the time of this admission he had tenderness over the region of the right kidney. The urine showed a pH of 6.0, but it was loaded with pus and a smear showed gram negative bacilli. Cystoscopic examination showed that all the pus was coming from the right urinary tract; the left urine was negative. The right urine was quite alkaline. A plain film showed an oval shaped phosphatic calculus at

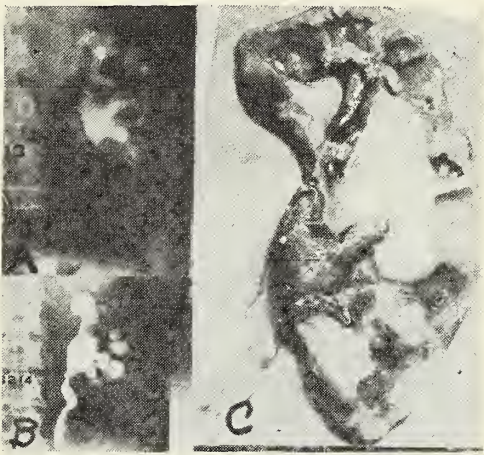


Figure 4

A 57 year old white female entered the hospital complaining of a dull ache in her left renal area which she had had off and on for ten years. During the four years prior to her entrance into the hospital her urine had been cloudy and pus had frequently been found in it. She had never had evidences of bladder irritation or hematuria, nor had she passed any stones. Examination revealed a well developed, well nourished white female. The left kidney was just palpable and slightly enlarged. The urine was loaded with pus and was alkaline in reaction. There was a staghorn calculus with a pyonephrosis on the left side; a normal urinary tract on the right side. A left nephrectomy was done on Dec. 14, 1942.

Note the hydronephrosis, the staghorn calculus, and the destruction of renal substance illustrated in "C." This shows marked renal destruction with symptoms so mild that the patient did not seek a medical examination for ten years after their onset.

"A" Plain film showing shadow caused by coraliform phosphatic calculus. Note how stone shadow follows configuration of kidney pelvis and calices.

"B" Pyelogram showing dilated calices and evidence of marked renal destruction.

"C" Section of kidney. Note stone with considerable peripelvic fatty infiltration and marked renal destruction. Few evidences of infection are present.

Case 3. (Fig. 5) Case to illustrate a dull aching pain and a tumor produced by renal stone.

A 49 year old white female entered the hospital Aug. 15, 1941, complaining of dull, aching backache on the left side of twenty years' duration. This had become so severe that it interfered with her housework. For the past seven years she had noted a mass which was somewhat tender in the left side. Examination revealed the patient to be in good general condition. There was a large mass in the left upper quadrant of the abdomen which was slightly tender and ballotable. The urine was loaded with pus and very alkaline. Left nephrectomy was carried out on Aug. 18, 1941.

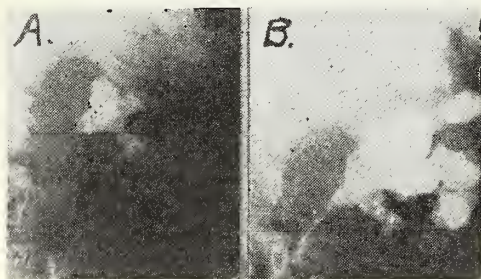


Figure 5

"A" illustrates the plain film with the coral calculus. "B" shows the tremendous changes in the kidney as a result of the presence of the stone. These are revealed by the pyelogram. Pyelogram on the right side was normal.

This case illustrates, first, the use of the pyelogram to show the results of the presence of renal stone, and, second, it shows that tremendous changes can be present in the kidney with very little symptomatology.

Case 4. (Fig. 6) Case to illustrate hematuria as a symptom of renal stone.

A 43 year old white female was admitted to the hospital on Oct. 16, 1942, with a story of hematuria for eight months. This was asymptomatic, without clots, chills or fever, or renal pain. General physical examination was entirely normal. The urine was at a pH of 5.8 and showed many red blood cells per high power field. Pyelograms

showed a normal kidney on the right side and a moderate left congenital hydronephrosis and several small stones in the left kidney pelvis. On Oct. 26, 1942, a left nephrectomy was performed. The illustration shows the cut section of the kidney with the congenital hydronephrosis and two small phosphatic stones in the calices. The

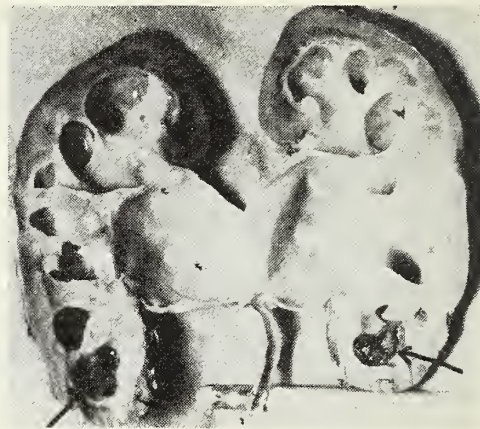


Figure 6

only symptom was a so-called "symptomless" hematuria. This is usually given as the cardinal symptom of carcinoma of the bladder, but in this case was a symptom of left renal stone.

Case 5. (Fig. 7) Case to illustrate pyuria as a symptom of renal stone.

A 26 year old white female was admitted to the hospital on Dec. 16, 1944, because of the finding of pus in her urine during a routine premarital physical examination two months previously. She stated that so far as she knew, she had always been well with regard to the urinary tract and felt well at the time of her admission to the hos-

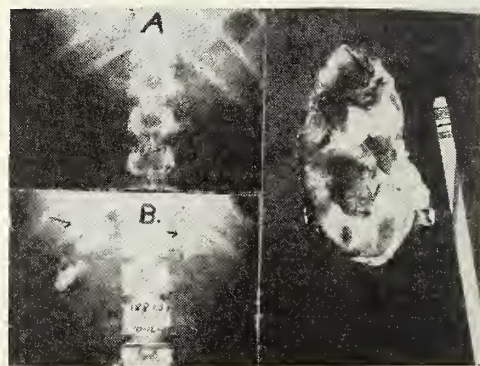


Figure 7

pital. Plain film (A) shows the presence of a large calcium phosphate stone in the region of

the right kidney. Intravenous pyelograms (B) showed a normal left urinary tract and marked caliectasis and diminution in renal substance on the right side. Ureteral catheterization showed a normal left urine with a pH of 5.5 and an alkaline urine coming from the right kidney with 10 to 15 pus cells per high power field. Right nephrectomy was performed on Dec. 18, 1944. The cut section of the kidney is illustrated in section C. It shows the rather extensive fatty infiltration, scarring and destruction of renal tissue without any symptoms referable to this. Postoperative convalescence was uneventful.

Case 6. (Fig. 8)
A 35 year old white male was admitted to the hospital on April 14, 1942, with a story of a mild aching pain of four months' duration in the left side. His general condition was excellent. The only positive physical finding in the examination

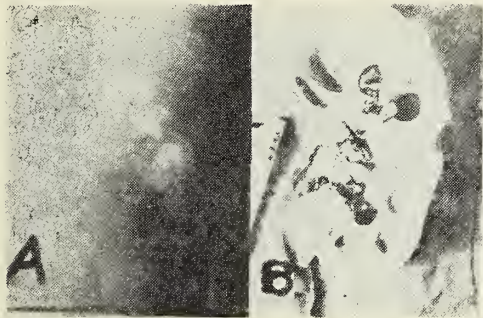


Figure 8

was a moderate amount of pus in the urine with a pH of 6.4. Pyelography revealed a nonfunctioning left kidney and a normal right urinary tract. On the plain film (A), a staghorn calculus and several adjacent calculi in the lower calyx were found. This is a typical staghorn calculus. Left nephrectomy was performed and the patient made an uneventful recovery. The cut section of the kidney and the staghorn calculus are illustrated in B. Note the extensive hydronephrosis and atrophy of renal substance and the large size of the stone—all with a very short and very mild history.

Case 7. (Fig. 9)
A 64 year old white male was admitted to the hospital on Feb. 3, 1943, with a story that he felt perfectly well but that a few days prior to his admission, in a routine physical examination for insurance, pus was found in the urine. Plain film showed the presence of a stone in the upper portion of the right kidney. This was a typical phosphatic stone of rather large size. Pyelogram revealed a normal left urinary tract. On the right

side there was evidence of a congenital constriction at the ureteropelvic junction, with very extensive caliectasis and atrophy of kidney substance and a stone in the upper calyx. Right nephrectomy was performed with an excellent recovery and complete cessation of the pyuria.

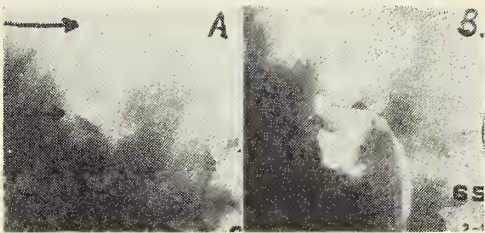


Figure 9

"A" is a plain film showing the stone in the region of the upper half of the right kidney with soft stone in the region of the pelvis. "B" illustrates the retrograde pyelogram with the extensive caliectasis and the stone present in the upper calyx.

Case 8 (Fig. 10)
A 21 year old white female entered the hospital on Apr. 27, 1945, with the following story: One and one-half years prior to her admission to the hospital, when she was seven months pregnant, she had an episode of chills and fever and attacks of pain in the left back and side. A diagnosis of pyelitis of pregnancy on the left side was made. Treatment with fluids and sulfathiazole cleared up the symptoms and the urine became negative. *No x-ray films were made.*

The pregnancy went on to a normal termination, and the patient was then well until five months prior to admission (thirteen months after her first symptoms) when she began to have at-

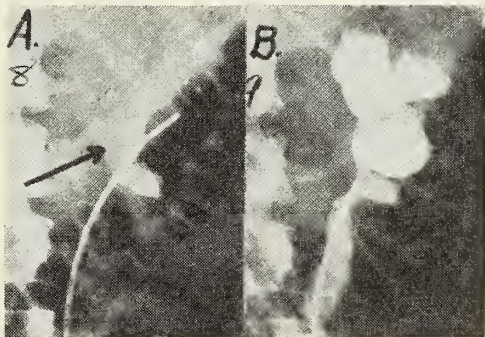


Figure 10

tacks of pain in the right side radiating to the groin and also pain in the left side. Examination showed some tenderness in the left upper quad-

rant; general physical condition excellent; and the urine loaded with white blood cells and with a pH of 6.2. Plain film showed the presence of a right ureteral stone and a left coralliform calculus. The latter is shown in the accompanying films. Note the changes in the pyelogram (B) due to the presence of the stone.

This illustrates the danger of not taking an x-ray film of the urinary tract whenever any of the evidences of renal stone are present. Pyelitis of pregnancy may be the presenting symptom of renal calculus occurring in conjunction with pregnancy.

Case 9. (Fig. 11)



Figure 11

Renal stone may simulate gallbladder disease, peptic ulcer, or other intra-abdominal conditions. This patient had very extensive renal disease on the right side as a result of renal stone, but it was first tentatively diagnosed as gallbladder disease.

A 38 year old white female entered the hospital with a story of having been treated for gallbladder disease for the past 18 years. For the past three or four years she had had many attacks of pain in the right side of the abdomen with chills and fever. There had been some bladder irritability. When she entered the hospital on Dec. 31, 1942, she was acutely ill and was complaining of severe pain in the right upper abdomen and back. Examination showed that the right diaphragm did not move to percussion. There was marked spasm of the muscles of the right flank and marked right costovertebral angle tenderness. Because of this tenderness, no definite mass could be palpated. The urine had a pH of 5.0 and was loaded with white cells. The white blood count was 19,500 and the red blood count was 2.2 million. Plain film revealed a right perinephritic abscess and a staghorn calculus in

the right kidney. Pyelograms showed a normal left urinary tract and nonfunctioning right kidney. On Dec. 31, 1942, the right perinephritic abscess was drained. Following this, the patient became afebrile, gained in weight and strength, and on Jan. 14, 1943 (two weeks after her admission to the hospital) a right nephrectomy was performed. The postoperative course was uneventful.

"A" illustrates the plain film. There is a curvature of the spine with concavity to the right. There is obliteration of the psoas shadow. This finding in conjunction with fixity of the diaphragm and the general symptoms of infection would indicate the presence of a perinephritic abscess. There is also evidence of a large staghorn calculus.

"B" illustrates the cut section of the kidney. All but one small stone have been removed. Note complete destruction of the kidney as a result of stone producing obstruction and infection.

Case 10 (Fig. 12) Case of renal stone whose only symptom was bladder irritability.

A 63 year old white female entered the hospital on Jan. 21, 1946, for a general check-up examination. Her only complaint was of considerable burning and smarting on urination and some increased frequency of urination. Examination revealed a healthy looking female. Her blood pressure was 190/110. The urine showed many white blood cells per high power field. Pyelography showed a staghorn calculus in the right renal pelvis with evidence of a pyonephrosis on the right side. The left urinary tract was normal. A right nephrectomy was done on Jan. 23, 1946, and the postoperative course was uneventful.



Figure 12

"A" shows the plain film, and "B" the cut section of the right kidney. Note the extensive change with very extensive fatty replacement and practically complete destruction of kidney associated with the staghorn calculus—this in spite of the fact that the only symptoms were those of bladder irritation. There were no symptoms localized to the kidney. Apparently the mechanism

TABLE III
Factors predisposing to the occurrence of a cystine stone:
A. Cystinuria—this must be present
B. An acid urine
C. Factors predisposing to the occurrence of a “nucleus”

of production of the symptoms was a spread of the infection from the right kidney to the bladder.

Case 11. (Fig. 13) Case of renal stones whose presenting symptoms were those of renal insufficiency.

An acutely ill 61 year old white male entered the hospital on Aug. 30, 1945, with a story of chills and fever, nausea, vomiting, lack of appetite and marked oliguria of seven weeks' duration. Examination showed a leukocytosis of 27,000, fever, and a blood urea nitrogen of 100.4 and creatinine of 16.6. X-ray studies revealed bilateral nephrolithiasis (multiple relatively nonopaque stones in each kidney pelvis) and a perirenal abscess on the left. Drainage of the left kidney resulted in marked improvement.

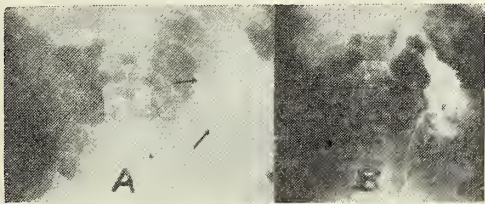


Figure 13

Case 12. (Fig. 14)

This case illustrates: (1) “silent” stones appearing in a patient with a fracture of the spine with cord injury; (2) the diagnosis which could have been made over one and one-half years earlier if stone had been suspected; (3) symptoms and signs (except radiographic signs) which did not appear until two years and five months after injury (this emphasizes early and repeated radio-

- TABLE IV
CONDITIONS PREDISPOSING TO CALCIUM UROLITHIASIS
1. Disease producing prolonged immobilization of the body.
 - a. Fractures of the spine or extremities associated with prolonged immobilization of large bones.
 - b. Chronic osteomyelitis.
 - c. Chronic arthritis, or other bone joint disease, producing immobilization of large portions of the skeleton.
 - d. Neurologic damage as a result of trauma or disease producing prolonged immobilization.
 - e. Chronic visceral disease requiring prolonged recumbency.
 2. Changes in the urinary organs.
 - a. Congenital anomalies associated with stasis.
 - b. Acquired obstructions—stricture of urethra, etc.
 - c. Paralysis of urinary passageway.
 - d. Introduction of infection into urinary tract.
 - e. Foreign body in urinary passageway.
 3. Endocrinopathies.
 - a. Hypoparathyroidism.
 - b. Hyperthyroidism.
 - c. Hyperparathyroid disease.
 4. Focus of infection elsewhere in body.
 5. Vitamin deficiency or excess.
 - a. Vitamin A deficiency.
 - b. Vitamin D excess.
 6. Metabolic abnormalities.
 - a. Idiopathic hypercalcinuria.
 - b. Changes in colloids.

graphic check-up before extensive renal damage has occurred); (4) use of low calcium diet, forcing of fluids and sulfanilamide to prevent recurrence.

A 53 year old white male suffered a fracture of the first lumbar vertebra with cord injury in January, 1936. His bladder was at first flaccid then spastic. Treatment by hyperextension resulted in the rapid improvement of the neurologic condition. By April, 1936 he had regained control of his bowels and bladder and was able to get up slightly. During January, 1936 it was noted that the urine was loaded with crystals, and two weeks after the injury the urine was also infected. It was alkaline throughout this period. Apparently, no effort was made to correct this.

He was next seen in 1937 for brace fitting. He appeared to have been steadily improving. His bladder function was good. The urine was not examined. Film “A,” taken for spine check-up, on re-examination shows definite stone shadows on the right side. These were not noted in the history and not taken into account in the treatment of the patient.

Early in February, 1938, one year after Film “A” was made, he developed spontaneous drainage from a perinephritic abscess on the right side. On May 20, 1938, two years and five months after the injury, films “B” and “C” were made. These show bilateral nephrolithiasis, with no function on the right and evidence of perirenal abscess on the right. On June 14, 1938, the right perirenal abscess was drained. On Aug. 12, 1938, the right kidney was removed. These procedures produced great improvement in his general condition. However a proteus bacillus infection in

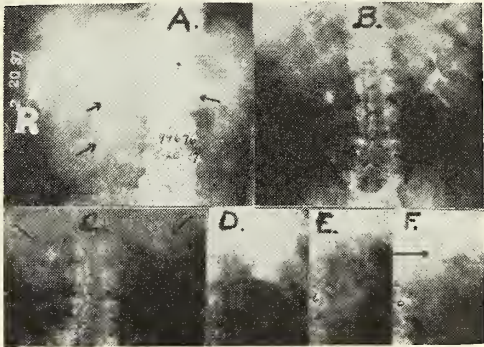


Figure 14

the left kidney could not be cleared up and the stone in that kidney gradually grew larger, as illustrated in Film “D.” Finally, on Jan. 16, 1939, a left pelviolithotomy was done. Chemistry

of the stone was calcium phosphate. Postoperatively, the patient was placed on the following regimen: forced fluids, sulfanilamide, one week out of every four, low calcium diet (since the patient was found to have ideopathic hypercalciuria). Check-up four months later on May 19, 1939, showed the urine now to be clear with no evidence of new stones. The sulfanilamide was stopped but the rest of the regimen continued. Check-up in January, 1940, films "E" and "F," showed excellent result. Check-up September, 1942, showed no evidence of recurrent stone and the infection controlled.

Discussion and Conclusion

This group of cases shows the variability and misleading qualities of the symptoms produced by renal calculi. In many patients during long periods of time, renal calculi were present without resulting in symptoms of any kind. One thing common to all of these patients was the ease with which the diagnosis of renal stone was made once it was suspected. By means of a plain film, intravenous pyelogram and retrograde pyelograms, all of the different types of calculi could be definitely diagnosed. The conclusion to be drawn from a study of these cases and an outline of the symptoms of the larger group illustrated in Table 1 is:

1. There are no symptoms which are definitely pathognomonic of renal stone. In fact, in a majority of cases no symptoms are present for long periods of time.

2. Uric acid and calcium oxalate stones will usually give symptoms pointing to the urinary tract before they have caused much renal damage. Cystine and calcium phosphate stones are usually silent until renal damage has occurred.

3. Renal stone should be suspected in the following situations: (a) whenever any symptoms are present pointing to a lesion in the urinary tract; (b) whenever any symptoms are present pointing to an intra-abdominal condition; or (c) whenever conditions have occurred which are known to predispose to the formation of renal calculi such as prolonged recumbency and urinary tract infection.

4. When renal stone is suspected, radiographic examination of the urinary tract should be done. It is of prime importance when the presence of renal stone is to be ruled in or out.

THE ANTICOAGULANT DRUGS

Diedrich J. Haines, M.D., Des Moines

Anticoagulant measures are used to prevent intravascular clotting. Intravascular thromboses usually occur as the result of one or more tendencies. The presence of a lesion of the intima of a vessel sets up a tendency for the deposition of platelets and the initiation of the clotting mechanism. Whether the lesion be traumatic or inflammatory, certain factors which augment the tendency to clot usually appear. These factors are a diminished blood circulation time and a tendency to stasis of blood in the venous vessels.

After surgery, within a few days the cardiac output is lessened, the circulation time is greatly prolonged and the metabolic rate of the patient is lowered. The same processes follow severe illnesses which necessitate confinement to bed. Inactivity, inadequate nutrition and passive congestion with inflammatory or traumatic processes near the veins augment the tendency to thrombosis. The trauma of surgery or accidental injury, especially severe crushing, greatly increase the probability of thrombophlebitis or phlebothrombosis. In some patients local defects leading to varicosities further these processes.

The physician who places an adult patient in bed on complete rest, whether postoperatively or otherwise, can help to minimize these additional factors. Careful handling of tissues at operation, early passive motion, mobilization and alimentation all help to reduce the risk of phlebothrombosis with embolism. Anticoagulant therapy is greatly assisted by these measures designed to prevent thrombosis, and the anticoagulant drugs should be used in conjunction with them. The drugs should not be used as a substitute for them.

However, in spite of attempts to oppose intravascular clotting by nursing care, it does regularly occur after surgical operations and accidents and in the courses of confining illnesses. Certain patients are more prone to have phlebothrombosis than others. The elderly, the obese and plethoric, those who have a history of previous phlebothrombosis, thrombophlebitis or embolism, all present a greater risk. Such circumstances constitute all indication for anticoagulant drugs in addition to routine prophylactic measures.

Another group of patients needing such therapy are those who have developed a thrombosis. In coronary artery disease, with thrombosis and infarction, anticoagulant therapy is indicated to prevent further thrombosis. It has been pointed out that with thrombosis of the anterior descending

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branch of the left coronary, the clot, if it propagates, may extend backward to block off the flow of the next longer vessel, the left coronary artery. That this does not occur more frequently is due to the operation of several natural protective actions in the blood vessel itself, as detailed by Quick. It does occur in some patients and aggravates their condition greatly. In addition, these patients have infarcts which cause changes in the endothelium of the heart over which mural thrombi form. Embolism from mural thrombi is very common and may prove fatal to such patients. The patient with a cardiac infarct is usually confined to bed and has a reduced cardiac output, a slowed circulation time and becomes a candidate for other vascular clotting as well.

Patients with thrombophlebitis can be more quickly returned to activity with anticoagulant therapy, the average length of disability having been reduced from eight to three weeks in some series. The main indications for anticoagulant drugs then are in surgical patients, cardiac infarction due to thrombosis of the coronary artery and in thrombophlebitis. Two drugs are available.,

Dicumarol was discovered by two men, Roderich in the Dakotas and Schofield in Canada in 1921. It was discovered as the active principle in spoiled sweet clover hay, the ingestion of which causes a hemorrhagic disease in animals. The isolation of this active principle and its synthesis was done by Link and his associates at the University of Wisconsin. In 1934 he joined two molecules of coumarin to form dicumarol. The coumarins we know as being responsible for odor of new mown hay. He synthesized coumarin from two molecules of salicylic acid and united them to form the drug dicumarol.

In appearance dicumarol is a white, tasteless crystalline powder. It is insoluble in water but is readily and quantitatively absorbed from the gastro-intestinal tract. It is soluble in the organic solvents.

Dicumarol does not act directly on the blood to prevent clotting. It does not prolong or prevent clotting in vitro. Roderich first showed that it acts on the liver to prevent the formation of prothrombin B. In forty to forty-eight hours enough prothrombin B is normally metabolized to cause a fall in the blood prothrombin and a prolongation of the clotting process. New prothrombin B is not being synthesized; the old is metabolized with a net result of a drop in the blood prothrombin. In very large doses, dicumarol also depresses the blood fibrinogen in the same way. This does not occur with ordinary therapeutic

doses. If this happens, clotting is further prolonged.

The platelets may be reduced and the clot may fail to retract. The drug increases the sedimentation rate.

The NPN blood sugar, WBC, RBC, bilirubin, calcium, fragility of RBC, and icteric index platelets all stay within normal limits under dicumarol therapy.

Link showed that there is no direct toxicity with the drug. Nausea, urticaria, headache, general malaise and aching, especially in the costovertebral angles, occur in some patients.

The administration of the drug is by mouth. It is usually given in a dose of 300 mg. the first day and about 100 to 150 mg. a day thereafter, depending upon the effect exerted. Some patients require very little and others more. Its effect is expected within forty-eight hours.

While the coagulation or clotting time of the blood is prolonged under the effect of dicumarol, it does not parallel the level of the prothrombin as shown by the prothrombin time. This determination is used to study the effect of the drug and to grade its dosage. The method of choice is as follows:

To 1 cc. of oxalated plasma add 1 cc. thromboplastin and place in a water bath at 37 C. After a few moments, 0.1 cc. of 1/40 molar calcium chloride solution is added and the time in seconds until a clot forms is measured. This is the prothrombin time. By use of a curve, the prothrombin time may be converted to the prothrombin level of the blood. Modifications of this test are not recommended. Each new batch of thromboplastin must be checked for activity as this varies and will cause inaccuracies. With Quick's earlier acetone extract of rabbit brain the normal or 100 per cent prothrombin time was around twelve seconds. With his later thromboplastin preparation, it is around seventeen to eighteen seconds.

It is the goal of dicumarol therapy to keep the prothrombin time between twenty-seven and sixty seconds with thirty seconds as an arbitrary standard. This insures prothrombin levels below 30 per cent of normal.

Levels of 20 to 30 per cent of the normal prothrombin have been maintained for long periods of time without any untoward effect. One patient was held at this level for over three months.

When the prothrombin time is sixty, or less than 10 per cent of the normal prothrombin is present, bleeding occurs. Some patients are susceptible to dicumarol and reach these levels with very little in the way of dosage. At Rochester, in a large series, about 27 per cent of the patients

were found to be susceptible; mostly they were patients with no history of previous thrombosis or embolism. Such patients need far less of the drug. Another group of patients likely to be susceptible to the drug will be discussed later.

Bleeding is classed as major or minor according to its severity, which varies from an occult blood in the urine to frank hemorrhage, both deep and superficial in type. In Barker's "Thousand Cases" minor bleeding occurred in 5.3 per cent; major bleeding occurred in 3.2 per cent.

If bleeding appears, a large dose of vitamin K is given. Sixty-four milligrams is recommended as the initial dose. The average ampule of water soluble vitamin K for parenteral use contains only 1 mg. A large one contains five. The dose necessary to control hemorrhage is much larger. Vitamin K was discovered because of its protective action to dicumarol. It may be necessary, and has been in my experience, to give transfusions of whole blood as well. This raises the prothrombin level of a bleeding patient the most rapidly. Fresh blood should be used, for prothrombin A disappears rapidly from stored blood. Such blood, while by no means without antihemorrhagic value, is not as effective as fresh whole blood or plasma. Bleeding may continue for several hours after the administration of vitamin K in large dosage and transfusions. This is frightening, but death from hemorrhage is not reported. The patient should perhaps be mentally prepared for hemorrhage. The best safeguard is daily careful watch over the prothrombin levels. Bleeding and unsuitable doses of vitamin K are what gave dicumarol a dim reputation for a while. This is not justified now.

Before going into specific uses of the drug, it will be well to take up the contraindications to dicumarol. These are many, but they follow definite patterns:

1. Dicumarol should not be used alone where it is necessary to prolong clotting before the end of forty-eight hours. This is the latent period of the drug. Where there is need for an anti-coagulant agent to act immediately, heparin is necessary.

2. The drug should not be used in patients who have jaundice or hepatic insufficiency, definite renal insufficiency, subacute bacterial endocarditis, blood dyscrasias with a tendency to bleed, recent operations on the brain or spinal cord, or in infants.

Dicumarol should be given cautiously to patients who have: ulcerative colitis, open wounds or open bleeding lesions; vomiting due to gastric or intestinal obstruction; continuous or repeated gastric drainage; patients in a poor state of nutrition; and parturient females.

The reason for these contraindications is fairly obvious. Infants and parturient women normally have lower prothrombin levels. Certain substances help to protect animals from the effect of dicumarol. Ascorbic acid is such a substance and large doses partially protect laboratory animals from hemorrhage after dicumarol.

Another such group is the methylxanthines, including our old standbys aminophyllin, theophyllin, theobromine, etc. Link has shown that these drugs increase the production of prothrombin. In large doses the methylxanthines will partially protect laboratory animals from the effects of dicumarol. It is a widespread practice to give these drugs to cardiac patients and to those with coronary artery disease with or without thrombosis. The tendency these drugs have to stimulate the liver to produce more prothrombin, and so augment the clotting tendency in such patients, is undesirable and may soon be recognized as a definite contraindication to their employment in heart disease of this type. Probably they add little to the patient's safety or comfort. Since Link's work, the indications for the methylxanthine drugs should be carefully re-evaluated.

Dicumarol is made from salicylic acid. There is evidence that this synthesis can proceed in the body and that in some people large doses of salicylates can produce the dicumarol effect of inhibition of prothrombin formation. Some drug companies have capitalized on this and added vitamin K to tablets of aspirin. The amount added is small, probably not enough to make any difference. The whole idea seems to be a commercial wrinkle. However, the use of large doses of salicylates in some patients should be carefully considered. We come now to the specific uses of the drug.

Postoperatively, dicumarol was used in 1,000 consecutive patients at the Mayo Clinic. The initial dose is given before the operation. The analysis of this and of other similar though smaller series has appeared in the literature for the past two years. In a general way, postoperative thromboses and embolism were greatly reduced. In patients in whom thrombosis or embolism or both appeared, it could be shown that the drug had been given in an insufficient amount.

One death occurred from embolism. The smaller series reported also show a striking diminution in the deaths from embolism and the manifestations of thromboses. I do not believe one can doubt the efficacy of dicumarol in preventing thrombosis and embolism postoperatively. The dosage is kept up about a week after the patient is ambulant.

In disease of the coronary arteries with thrombosis and infarction, many series are reported.

Thrombotic and embolic manifestations have been placed at 37 per cent in untreated series. Dicumarol has caused a great drop in these high figures.

It would be difficult now to prepare an average. In one series of 44 patients who had coronary thrombosis with cardiac infarction and who received dicumarol all those in the first attack survived. Only death from embolism occurred, and again this was a patient who had an insufficient dose of dicumarol. The advantages of dicumarol therapy in this condition are: (1) the prevention of extension of coronary thrombosis; (2) prevention of secondary myocardial infarction during the healing stage; (3) the prevention of the formation of mural thrombi; (4) prevention of phlebothrombosis during convalescence; (5) safety in digitalizing the heart after infarction. The indication would logically seem strongest in patients having an anterior wall infarction. It should be remembered that dicumarol increases the sedimentation rate.

Thrombophlebitis usually involves a long disability. The use of dicumarol is known to reduce the length of illness by about two-thirds as has been shown in several series. The Europeans use heparin for this purpose.

Heparin

Heparin is present in the body normally but is not normally found circulating in the blood. It may be recovered from most of the tissues; the present product is an extract of lungs, liver and intestines. Scott and Charles isolated a pure enough heparin to use clinically in 1936.

Heparin is a strongly acidic compound of carbohydrate nature. Its formula is thought to be similar to mucoitin polysulfuric acid. It contains glucosamine, an unknown uranic acid and sulfuric acid in ester linkage. Heparin has been crystallized as a barium salt.

When heparin is added to the blood it combines with heparin complement, one of the albumen fractions. This product neutralizes thrombin and so directly stops clotting; the probable action is that it prevents the conversion of prothrombin to thrombin. Heparin also inhibits platelet agglutination.

When given intravenously, heparin acts instantly. Its action is not prolonged above two or three hours. For this reason, if it is to be used intravenously, it must be given continuously. Given intramuscularly, its action is a little prolonged.

Heparin may be given intramuscularly in a vehicle which allows only slow, steady absorption. Pitkin's solution is such a vehicle. Heparin given this way begins to exert its effect within two hours, but the total effect is prolonged from thirty-six

to forty-eight hours. Pitkin's solution contains 100 mg. of heparin.

The effect of heparin is measured chemically by the coagulation time. Usually an amount necessary to prolong coagulation or clotting by four or five times is given. It may be used to give an immediate effect during the latent or lag period of dicumarol. Its chief disadvantage is its expense. Heparin does detoxify digitalis, ouabain and strophanthin. It also lessens anaphylactic shock in the guinea pig. The contraindications to the use of heparin are the same as those for dicumarol. Its indications are likewise the same.

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EXAMINATION OF THE UNCONSCIOUS PATIENT

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The management of the comatose patient is an exacting responsibility and one that taxes the resources of the attending physician. Effective treatment depends upon accurate diagnosis, which in turn hinges upon adequate examination. Since examination, utilizing the skill of physical diagnosis and the aid of the clinical laboratory, precedes and is directed by diagnostic considerations, examination and certain features of the differential diagnosis had best be considered together.

In the first place, certain general statements should be made. The depth of the coma aids little, if any, in determining the etiology. Since the patient may fall either before or after loss of consciousness, more than one cause of the coma must be seriously considered. For example, the patient with cardiac syncope may fall to the ground and suffer a cerebral concussion in the fall. Further, there are causes for coma in which coma is an early symptom, such as head injuries, cerebrovascular insults, acute drug poisoning, and epilepsy; and causes in which loss of consciousness

occurs lately or terminally, as in uremia, meningitis, diabetes mellitus and certain severe fevers.

In examining the unconscious patient, the usual procedures of physical diagnosis are employed. The patient must be examined where the physician first sees him, and although the surroundings are seldom ideal, the examination should be thorough lest an obvious cause be assumed the sole cause of coma when multiple causes are present.

Preliminary Appraisal

The color of the skin and mucous membranes and the nail beds are inspected. After severe head injuries, pneumonia, and epileptic attacks there may be cyanosis. After carbon monoxide poisoning, the skin has a bright, cherry-red color. Pallor is seen in shock from acute blood loss, or in cardiac syncope as the Stoke-Adam's syndrome. Hydration of the skin is estimated, and we remember that dehydration accompanies diabetic acidosis and chronic alcoholism.

Evidence of external bleeding is looked for. Bleeding from the ears and nose occurs in basal skull fracture. Hematemesis may mean rupture of esophageal varices, or hemorrhage from a peptic ulcer. The appearance of frothy blood on the lips may indicate a pulmonary origin of the bleeding.

Any abnormal attitudes or deformities are noted. Convulsive movements are seen in epilepsy, brain tumor, uremia, sometimes in insulin shock, and in hypertensive encephalopathy. Opisthotonus is seen in meningitis, and decerebrate spasticity results from brain injury or encephalitis. The attitude of a limb, as the silver fork deformity of a Colle's fracture, may immediately suggest the bones involved in a dislocation or fracture. Spontaneous movements of the comatose patient should be observed carefully. In hemiplegia, one arm or leg may fall more limply than the other, or irritants may be brushed away with limbs of the sound side only.

The rate, amplitude and rhythm of respiration are noted, as well as the odor of the breath. While an alcoholic odor of the breath makes acute alcoholism suspect, remember that the patient may have had a drink or two, and then have lost consciousness from some entirely unrelated cause. This point cannot be too strongly emphasized, and it is never safe to arrive at a diagnosis of alcoholism by the odor of the breath alone. The breath of the patient in diabetic coma smells of acetone, and sometimes ingested poisons will impart a characteristic odor to the breath. After cerebral hemorrhage, the respirations show a regularly irregular rhythmic pattern called Cheyne-Stoke's respiration. This type of breathing may

also be found in other conditions which affect the respiratory center in the medulla—brain tumor, cardiac disease, uremia and pneumonia. An irregular irregularity of breathing called Biot's respiration is found in meningitis. An extremely rapid rate of respiration is the Kussmaul breathing of diabetic acidosis.

The pulse is palpated and counted. A rapid, shallow pulse is found in shock from any cause, in diabetic acidosis, and in barbiturate poisoning. A slow pulse accompanies conditions with a progressive increase in intracranial pressure. The irregular pulse of auricular flutter or fibrillation may accompany cardiac decompensation, or result from acute toxicity, as after carbon monoxide poisoning.

Following this preliminary appraisal of the patient, a more systematic and detailed examination is made. If it has been determined that the patient is not in shock and if the surroundings are adequate, as in the emergency room of the hospital, or in the patient's own room, articles of clothing are removed to facilitate further examination.

Systematic Examination

The head is examined carefully. Lacerations of the scalp and depression of the skull are looked for. Scalp lacerations are palpated with the sterile gloved finger to determine if a depressed skull fracture is present. Observation of the pupils is important. Anisocoria means disturbance of the nerve supply to the pupil, and in the case of space-occupying intracranial lesions, the pupil is most often dilated on the same side as the lesion. The reaction of the pupils to light and extraocular movements are recorded. After a convulsive seizure or cerebral hemorrhage, the pupils are usually dilated. Pin-point pupils occur in opium poisoning, and after hemorrhage into the pons or ventricles. The eyeballs are palpated and are soft in the dehydration of diabetic acidosis.

When available, the ophthalmoscope is used. Papilledema may be found in brain tumor, subdural hematoma, malignant hypertension and brain abscess. Retinal hemorrhages may accompany subarachnoid hemorrhage from a ruptured intracranial aneurysm and are often found in chronic hypertension, uremia and eclampsia.

Rigidity of the neck is tested for; a stiff neck occurs with meningeal irritation in encephalitis, meningitis, brain abscess, tumors of the posterior fossa of the skull, and after subarachnoid hemorrhage from any cause.

The chest is examined for external injury. A sucking wound of the chest has a characteristic sound. Depression of the sternum or rib cage is

looked for. Suprasternal emphysema, with distension of the neck veins, indicates injury to the trachea, larger bronchi, or esophagus. Cardiac tamponade by active bleeding within the pericardium is to be kept in mind.

The abdomen is examined for external injury, as laceration or ecchymosis, and is palpated for muscle rigidity, masses and fluid.

The genitalia are inspected, and if no urine specimen is available the patient should be catheterized. If bloody urine is obtained, it may mean rupture of the bladder, and the catheter should be left in place. The presence of vaginal bleeding or discharge is looked for in the female.

The extremities are inspected for lacerations, contusions and deformities. Each joint of the extremity is tested through a full range of motion, and limitation of motion or deformity is noted. Palpation of the peripheral arteries provides information as to arteriosclerosis, and the presence or absence of peripheral pulsation is recorded. Coolness or coldness of an extremity may mean vascular occlusion to that limb or be associated with hemiplegia. Swelling of an extremity occurs with fractures, contusions and thrombophlebitis. Clubbing of the fingers is found in congenital heart disease and in chronic pulmonary pathology, as bronchiectasis and lung abscess.

The back is examined for external injury and such deformities as gibbus, which may be produced by fractures of the spine. If fracture of the spine is suspected and the patient is to be transported, he is best moved in a prone position, or supine if the litter is rigid.

A partial neuromuscular evaluation has been made by this time. The deep reflexes are tested, and the superficial abdominal and cremasteric reflexes are not neglected. A cheek which puffs out on expiration more than the other indicates paralysis of the facial muscles on that side. Supra-orbital pressure is exerted, and the total response of the patient and movements of the extremities noted. Only the limbs on the sound side in a hemiplegic patient will move after such stimulation. In addition, an estimate of the depth of the coma is gained. Lack of response means deep coma and often a poor prognosis. The hysterical patient will usually respond by voluntarily contracting the orbicularis oculi muscles. Percussion over the facial nerve just anterior to the parotid gland and above the parotid duct produces movements of the facial muscles in alkalosis and tetanus. Dorsiflexion of the great toe, with or without fanning of the lateral toes in response to plantar stimulation is the sign of Babinski, which

signifies involvement of the pyramidal tract, in the cerebrum, brain stem or spinal cord, by injury, inflammation, tumor, vascular insult or degeneration. When unilaterally present, it is of localizing value and is commonly found after head injuries and cerebrovascular insults. The signs of Chaddock, Gordon, Oppenheim, Schaffer, Foster Kennedy and Gonda have the same significance as Babinski's sign, and are of confirmatory value. Unilateral hyperreflexia is found in the hemiparetic limbs; bilateral hyperreflexia is present in meningitis; and bilateral areflexia occurs in injuries to the spine and in profound coma from any cause.

If a sphygmomanometer is available, the systolic and diastolic blood pressure levels and the pulse pressure are determined. In shock from blood loss or severe injury, there is depression of both systolic and diastolic levels. In pericardial effusion, there is a depressed blood pressure with a low pulse pressure and high venous pressure, as evidenced by distension of the external jugular veins. In Addison's disease, hypotension is one of the classical signs. After severe injury to the brain, and paralleling the compensatory effort of the brain stem, there is a progressive elevation of the systolic level and pulse pressure along with bradycardia up to the point of medullary decompensation, after which there is a fall in the systolic blood pressure level and pulse pressure with tachycardia. In such a situation, due to any intracranial lesion causing a rapidly progressive increase in intracranial pressure, death is of the so-called medullary type with cessation of respirations before the heart expires. An elevated blood pressure is found also in essential and malignant hypertension, glomerulonephritis, uremia, polycythemia vera, tumor of the adrenal gland (medullary), and basophilic adenoma of the pituitary gland (Cushing's syndrome). If it is determined that the patient is in shock, which should be done immediately, active treatment of shock takes precedence over detailed examination procedures.

Having completed the physical examination, and noting especially the odor of the breath; the color of the mucous membranes and skin; the type of respiration and pulse; the hydration of the eyeballs; the size, shape and reactivity of the pupils; stiffness of the neck; the response to supraorbital pressure; any spontaneous movement; the fundoscopic examination; the blood pressure; the temperature; all evidences of external injury; and the state of reflexes, including the Babinski response, the physician now uses the laboratory facilities available to him to perform the indicated laboratory procedures.

Laboratory Examination

A specimen of the urine is examined, and this is usually a catheterized specimen. Its gross appearance is noted and tests run for specific gravity, sugar, albumin, acetone, diacetic acid, and cellular constituents. In diabetic acidosis, all of these elements will be abnormally present or altered. It must not be forgotten that in severe fevers, dehydration, alcoholism and some drug intoxications, acetone may be found in the urine in the absence of sugar. The urine in alcoholism and drug intoxications is more likely to have a normal specific gravity than in diabetic acidosis. In glomerulonephritis or essential hypertension of long duration, albumin is present in the urine with red cells, white cells and granular and hyaline casts. Albuminuria is often found after subarachnoid hemorrhage from rupture of an intracranial aneurysm.

The peripheral blood is examined for total red and white cell counts, grams of hemoglobin and differential cell study. The total white cell count can be increased in any hemorrhagic or inflammatory condition in the body, and in leukemia. The total red cell count is increased in polycythemia vera and dehydration. Low red cell levels are found after acute blood loss and in chronic anemic conditions, such as malnutrition and chronic nephritis. The differential cell count is significant in infections such as meningitis and pneumonia where a predominance of juvenile and mature polymorphonuclear neutrophils are found. An increase in lymphocytes is found in infectious mononucleosis and lymphatic leukemia. Eosinophilia suggests allergy or parasitic infestation, as trichiniasis.

Certain blood chemistry values are extremely useful. The blood sugar may be elevated in any patient post-*cebum*, but alimentary hyperglycemia and glycosuria are not associated with acetoneuria. In cases of hyperinsulinism, an appreciation of the low blood sugar level leads to the lifesaving administration of intravenous glucose. If there is an elevated blood sugar level with acetone in the urine, or evidence of alkalosis with tetany, or a severely toxic or dehydrated patient, or coma in infancy, the CO_2 combining power of the blood should be determined. With clinical evidence of tetany, the blood calcium is calculated. In all patients, retention of nitrogen metabolites is determined. Any one or all of these nitrogenous substances will have an elevated level in uremia, or in any severe parenchymal or obstructive renal lesion. These substances become increased early in the severely burned patient.

While the blood serology should be tested routinely, since syphilis is one of the causes of coma,

the Wassermann test or one of its equivalents is not an emergency procedure in the routine work-up. Other tests, as for blood chlorides, blood total protein, etc., can be ordered as indicated by the demands of the individual case, but need not be used routinely. The same can be said for the blood alcohol test. It is wise to determine the blood alcohol in all comatose patients with an alcoholic odor to the breath, but it must be remembered that other volatile reducing substances, as acetone, in the blood may give a positive reaction for alcohol and that it is unwise to make a diagnosis of alcoholism on a laboratory procedure alone. The patient with a high level of blood alcohol may be unconscious from some other cause, as head injury. Lastly, laboratory procedure may be of value in special cases of intoxication, as carbon monoxide poisoning.

Spinal Fluid

Every unconscious patient in whom the cause of coma is unknown should have a lumbar puncture, provided that he is not in shock, and there is no papilledema. The measured pressure of the fluid; its appearance, either crystal clear, turbid, xanthochromic or grossly bloody; and its chemical and cytologic composition all provide important clues to the diagnosis. Turbid fluid is found in encephalitis and meningitis; xanthochromic fluid in generalized icterus and often in chronic subdural hematoma; and grossly bloody fluid in subarachnoid hemorrhage from laceration of the brain, hemorrhage into a tumor or from a vascular tumor, rupture of an intracranial aneurysm, or in some cerebrovascular insults. With a clear or turbid fluid, increase in the total protein and cell count are present in inflammatory conditions. The spinal fluid sugar is increased in diabetic coma, and reduced in bacterial meningitides. The chlorides may be reduced in tuberculous meningitis, with a positive Levinson test. The colloidal gold curve which is not available until after twenty-four hours shows characteristic zone changes in syphilitic neural infections and in multiple sclerosis.

History

To date, no mention has been made of the history. It goes without saying that while the unconscious patient cannot supply a history the family, relatives, friends, police or casual onlookers may be able to offer diagnostic information. Knowledge that the comatose patient is a known hypertensive, nephritic, diabetic, alcoholic, cardiac, or epileptic sufferer; that he received an injury to the head; that he was working in a closed garage with the doors shut and the car motor running; that he was despondent and took a drug in

a suicidal attempt, and perhaps a sample of the drug or the container from which it came; and a recital of the events which preceded the loss of consciousness should be zealously sought for and may direct the examination if not establish the diagnosis.

Differential Considerations

At this point I should like to include a short and perhaps repetitious consideration of differential diagnosis. The physical and laboratory examinations are preliminary and necessary to the diagnosis, but it is the diagnosis which must determine intelligent therapy. Included is a short resume of conditions which commonly cause loss of consciousness with no effort to be complete, in the hope of integrating the examination procedures on a diagnostic level and at the risk of being redundant.

Intoxication with alcohol, carbon monoxide, and other drugs or poisons is a common cause of coma. The alcoholic has an alcoholic odor to the breath; there may be vomitus smeared over the face and clothes; the respirations are rapid and regular; the pulse is rapid and regular; the face is flushed and the extremities cool to the touch; the pupils are equal and dilated and show a hippus reaction to light; there is conjunctival injection, hypothermia and the blood alcohol is greater than 4.0 mg./cc. In carbon monoxide poisoning the skin and mucous membranes are cherry-red. The patient is discovered in a closed space with a source for the gas. There is hypothermia, rapid pulse and respiratory rate, and usually hyporeflexia although tonic and clonic spasms may occur, and carbon monoxide can be detected in the blood. Opium poisoning causes pin-point pupils, pallid cyanosis of the skin and mucous membranes, and depression of the body temperature and respiratory rate. Barbiturate poisoning produces a peripheral circulatory failure with cyanosis, cold skin, rapid pulse and slow respirations.

Cerebrovascular insults are seen at all ages from childhood on. In the young person, a cerebral embolism from congenital or infected heart disease and rupture of a congenital intracranial aneurysm (miliary) are the most common causes. Cerebral thrombosis due to luetic or arteriosclerotic disease of the cerebral vessels occurs in the adult or older age groups, and it should be noted that cerebral thrombosis is not so likely to produce loss of consciousness as is a hemorrhage. Cerebral hemorrhage is more common in the older age group, as is rupture of the arteriosclerotic or saccular intracranial aneurysm. There may be other evidence of arterial disease, as arterial hypertension, peripheral and retinal vessel sclerosis, im-

paired renal function with oliguria, albuminuria with casts, and azotemia. The rupture of a congenital intracranial aneurysm is of sudden onset; the pupils may show anisocoria or be equally dilated; the pulse is slow, full and bounding; the respiratory rate is increased; there is hyperpyrexia; usually no focal neurologic signs are found other than a stiff neck and bilateral signs of Babinski; there is albuminuria, leukocytosis and bloody spinal fluid. In cerebral hemorrhage, the onset is sudden with other evidence of arteriosclerosis; the pulse is rapid and may be irregular; there is hyperpyrexia; stertorous breathing with Cheyne-Stoke's respirations is common and there are focal neurologic signs, depending upon the location and extent of the hemorrhage which usually produces a complete hemiplegia with hyperreflexia and the sign of Babinski. If the hemorrhage is considerable and reaches the ventricles or subarachnoid space by extension, there is a stiff neck and bloody spinal fluid.

Trauma to the head is not an uncommon cause of coma. There is a history of injury to the head with loss of consciousness; the scalp may or may not be lacerated and the skull may or may not be fractured. If the injury produces local brain injury, there will be focal neurologic signs, and bloody spinal fluid means laceration of the brain. When the general condition of the patient permits, all these cases must have roentgenograms of the skull. There are particular types of head injuries of surgical importance, such as basal skull fractures, simple and compound depressed skull fractures, extradural hemorrhage, acute and chronic subdural hematomas, and intracerebral hematomas, but delineation of these varieties is not within the scope of this paper.

The epileptic, in his postictal coma, breathes noisily and rapidly, the pulse and blood pressure are elevated, the pupils are widely dilated, the mucous membranes are cyanotic, the tongue is lacerated with fresh blood on the lips and the undergarments are soiled, usually with urine. Unless he goes into status epilepticus, the epileptic patient does not remain long unconscious. With pneumonia, the pulse is rapid, the temperature high, the color cyanotic, respirations are rapid and labored, and there are physical and roentgenographic findings of pneumonia. In diabetes mellitus, the patient may lose consciousness from diabetic coma or insulin shock. In diabetic coma, the patient is dehydrated with a dry tongue and soft eyeballs, the breath smells of acetone, the blood pressure is depressed, the pulse is rapid and feeble, there is air hunger with Kussmaul breathing, there is hyperglycemia and glycosuria

with acetone and diacetic acid in the urine, and a low CO_2 combining power is found in the blood.

In insulin shock, the tongue is moist, respirations are quiet, there is no odor of acetone to the breath, the pulse and blood pressure are normal, convulsions often occur, and there is a low blood sugar level without evidence of acidosis. In meningitis, the patient is febrile with a stiff neck, there is hyperreflexia, and turbid spinal fluid is withdrawn under elevated pressure with an increased cell count. In cardiac decompensation, the peripheral veins are distended and do not collapse on elevating the patient's limbs, the neck veins are distended, there is a cardiac murmur, the pulse is usually irregular, there is azotemia, anasarca, noisy breathing and cyanosis. As is usual for syphilis, the findings in neurosyphilis are bizarre and variable, depending upon the degree of parenchymal, vascular, or meningeal involvement. You are forced to depend upon the spinal fluid serology in these cases. The patient with uremia may show the uremic frost, oliguria, retinal changes of degeneration, hemorrhage and sclerosis, convulsions often, hyperpyrexia and azotemia. The eclamptic woman resembles the terminal uremic and diagnosis is rarely difficult. Encephalitis has no constant mode of appearance, and examination of the spinal fluid offers the most diagnostic help.

The brain tumor which produces coma has usually a high degree of papilledema, and when seen, the patient may show decerebrate spasticity due to pressure exerted on the midbrain at the notch of the tentorium, and medullary decompensation with rapid pulse, falling blood pressure, hyperpyrexia and Cheyne-Stoke's respirations. After a brain abscess is encapsulated, the patient shows evidence of increased intracranial pressure with papilledema, bradycardia, hypothermia, normal respirations, increased pulse pressure and focal neurologic signs depending upon the location of the abscess. If seen late, the patient will resemble the terminal brain tumor with medullary decompensation or the abscess may have ruptured into the ventricle or subarachnoid space with the production of clinical meningitis. The hysterical patient will have normal vital signs, no pathologic reflexes, and voluntary contractions of the orbicularis oculi muscles can often be noted in response to supra-orbital pressure. Malaria should be mentioned as a cause of coma because of the number of persons who were exposed to malaria while in the service. Delirium usually precedes the coma, and the blood smear is positive for the plasmodium.

Examination of the unconscious patient has been discussed with diagnostic considerations receiving

the most emphasis. Intoxications, cerebrovascular insults, trauma to the head, epilepsy, pneumonia, diabetes mellitus, meningitis, cardiac decompensation, neurosyphilis, uremia, eclampsia, encephalitis, brain tumor, brain abscess, hysteria, and malaria, have been reviewed as causes of coma, along with the pertinent physical and laboratory findings in these conditions.

THERAPEUTIC EMERGENCY MEASURES IN BRONCHIAL ASTHMA

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Definite emergency measures are required in the care of the patient with acute bronchial asthmatic symptoms. No general suggestions can be offered which will give relief in all instances. As in every allergic condition, individualization of specific and nonspecific therapy must be accomplished. Those medications and methods which extend relief to one patient will not provide the same comfort to the next; actually, the same drug may be contraindicated in the third patient. Bronchial asthma should be considered as an emergency. This bespeaks for alert recognition of causative factors, careful observance of the patient response and cautious therapy extended for adequate comfort.

A patient with severe bronchial asthma presents a characteristic clinical picture. Prolonged and marked respiratory difficulty existing in association with extreme coughing and wheezing precedes a state of eventual collapse. The dyspnea often extends to the point of exhaustion. The allergic shock in these asthmatic patients is characterized largely by involvement of the respiratory system, though other shock tissues may be concurrently affected. If death occurs asphyxiation is of primary consideration with heart involvement ordinarily in a minor role.⁷ The remarks of this presentation will be limited to the accepted use of recommended therapy in the relief of severe bronchial asthma.

General Therapeutic Measures

A brief history and superficial physical examination are prerequisites to the institution of any form of emergency therapy. The patient may often have knowledge of a distinct sensitivity for the very drug the physician had intended to administer. The elimination of known causative allergens should be accomplished. Environmental correction can best be achieved by the removal of

the patient to a hospital. Dietary management and the institution of an elimination routine are more adequately controlled in hospital surroundings. The degree of discomfort and the severity of symptoms will, to a great extent, determine whether such admission is a necessity. In all asthmatics, nonspecific environmental changes should be initiated by feather and dust removal and/or control to as great a degree as possible.

Rest and quiet are all important. Relief of dyspnea and coughing will permit the usual patient to rest satisfactorily. Sedation must be cautious and be guided by the needs of the patient and his general condition. Medication should be ordered for administration on the second, fourth, sixth or eighth hospital hours. It is surprising how many physicians will prescribe one therapeutic measure to be given every two hours and other therapy every three or four hours. A review of the medication schedule reveals that the patient is being disturbed practically at hourly intervals. Most of these interruptions could be omitted by schedule combination permitting maximum rest periods. It is best for the patient to be isolated from all visitors until his acute symptoms have been abated.

Dehydration is one factor too important to be overlooked in general asthmatic care. The degree of fluid loss and inadequate replacement rests with the duration and severity of the characteristic symptoms. Replacement of tissue fluid can be accomplished by intravenous, subcutaneous or other parenteral route. Glucose 5 per cent or 10 per cent in saline intravenously, to which other medication can be added, is preferred. Often the administration of glucose and saline will provide sufficient liquifaction of thick sputum to permit expectoration of bronchial plugs and tenacious mucous. Vitamins B and C may be added to this solution, but subsequent insulin is not needed nor indicated.

Anoxemia is evidenced by apparent cyanosis and severe dyspnea. Inhalation treatment is indicated in two groups of bronchial asthmatics uncontrolled by allergically directed therapy. In the first, administration of oxygen alone or with added gases is prescribed to prevent asphyxia. Intractable asthma, however, may produce no cyanosis nor evidence of anoxia. The physiologic basis for oxygen use, in the second group, is the existence of pulmonary emphysema which develops frequently in patients who have been subjected to prolonged constriction of the bronchial muscles. Carbon dioxide administration is not indicated in inhalation therapy of asthma because it increases pulmonary ventilation and accentuates

the dyspnea. Basch⁴ and his co-workers have reported the use of carbon dioxide inhalation as an expectorant, but its value is yet to be determined. This use of oxygen as part of the therapeutic measures in asthma will be more fully discussed in later paragraphs.

The maintenance of a satisfactory nutritional state must be considered an important branch of asthmatic therapy. Glucose and parenteral fluids aid in this decision. Ingestion of food and fluids often interferes with respiration and tends to increase dyspnea. These procedures may be kept at a minimum until the desire for them is expressed by the patient. When the diet is increased, care should be observed to avoid those foods to which the patient is known or suspiciously sensitive. Soft, liquid, easily assimilated foods should be on the initial menu. Davison⁶ has recommended oral starvation for a short period in order to insure freedom from possible food sensitization, but he advocates the use of the above procedures for nutritional balance.

Pharmaceutical Measures

Epinephrine hydrochloride:—Without this drug, the therapist would be at a distinct loss. Aqueous epinephrine 1-1,000 is the drug of choice for the immediate relief of asthmatic symptoms. Satisfactory relief and comfort is offered to the patient with asthma by the proper administration of this valuable medication. The optimum dosage of the drug is the smallest amount which produces effective relief. In a subcutaneous dosage of 0.25 cc. to 0.4 cc. (4-7 minims) prompt release from marked bronchial constriction is usually experienced. This dosage can be repeated frequently—at twenty to thirty minute intervals—without producing excitement, nervousness nor restlessness in the patient. It is wise to vary the site of injection to insure immediate absorption. Larger dosages are rarely indicated and should not be used. Prolonged use of this drug or administration of repeated excessive amounts may lead to a state of refractoriness in which the symptoms are not relieved; a state in which the patient responds to the injection with increased apprehension, perspiration, headaches and anxiety. Such "epinephrine-fast" cases call for other measures of relief with complete avoidance of further epinephrine. Resumption of its use with expected results will be satisfactory in the above suggested dosages after the asthmatic cycle has been broken.

Epinephrine 1-100 can be used in a glass nebulizer as an aerosol. The success of this method of administration is dependent chiefly upon two factors—the type of apparatus used and the severity and degree of distress. In aerosol therapy of

the lungs, it is necessary that the mist be stable and of small particle size for adequate distribution. The ordinary medical atomizer produces a mist or aerosol in which the liquid is contained in the form of comparatively large particles. Reduction in particle size is accomplished in effective nebulizers by employing a baffle to collide with the spray droplets. Many commercial nebulizers (DeVilbiss 40; Vaponefrin) are constructed with baffles which give particle size distribution suitable for aerosol therapy of the lungs. Abramson¹ has modified the DeVilbiss 40 by the addition of an L-shaped tube which prevents solution spilling at any angle and which acts as a secondary baffle. If nebulization is hand operated the patient must be in sufficient respiratory balance to permit deep inspiration at the same time pressure is applied to the bulb. The patient should be advised to use the epinephrine aerosol, if possible, as prevention of the attack. Instruction of the patient in the proper use of this solution and apparatus is extremely important. Nebulization of this concentrated epinephrine may be arranged so that this procedure and oxygen administration are coupled and simultaneously offered to the patient.

Prolongation of the epinephrine effect has been enhanced by the use of this drug in an oily suspension. In a dilution of 1-500 in oil or gelatin, symptomatic relief may be possible for as long as six to eight hours in comparison with the two to three hour relief obtained with the aqueous solution. This "slow" epinephrine, however, should not be used for effective relief of immediate symptoms. Administration of epinephrine-in-oil should follow by a few minutes the injection of epinephrine 1-1,000, so that the accomplishment will be continuous relaxation of the bronchial musculature. A word of caution is given regarding the dosage and the use of this preparation. For the initial use of epinephrine-in-oil, a dosage of 0.5 cc. is sufficient. This may be repeated if necessary. Subsequent dosage may be increased to 1 cc. if the patient demonstrates no evidence of intolerance. A dry, sterile syringe should always be used inasmuch as the crystalline epinephrine is held in the oily suspension, and the presence of moisture in the syringe may precipitate the drug to produce marked unpleasantness or shock upon injection.

Ephedrine sulphate:—This drug has been employed for bronchial relaxation in a dosage of grains $\frac{3}{8}$ to grains $\frac{3}{4}$. Administration routes are orally or subcutaneously, with the former to be preferred. The effective response is not as rapid as with epinephrine, but often the beneficial result is prolonged. These two drugs enhance

each other in their action if used in association or concurrently. Ephedrine and drugs of similar chemical structure and clinical action are best used as routine measures of asthma prevention. Patients are advised to use oral ephedrine every six to eight hours in attempted prevention. Its use in this respect is more valuable than its administration for immediate relief. In combination with mild sedation, ephedrine must be considered as a valuable part of asthmatic therapy. Ephedrine sensitivity is not an infrequent occurrence. With prolonged use, caution must be exercised to avoid urinary bladder relaxation. Some patients will obtain better relief when propadrine or racephedrine is substituted for ephedrine.

Aminophyllin (theophylline with ethylenediamine) is available for administration via the following routes: intravenously, intramuscularly, orally, and rectally. The usual dosage is $1\frac{1}{2}$ grains to $7\frac{1}{2}$ grains depending upon the manner and method of its use. Intramuscular administration ($7\frac{1}{2}$ grains) is associated with discomfort and pain at the site of injection and for this reason, the other routes are to be preferred. Intravenously, the drug should be handled with caution and with care. Slow injection is strongly advised. An elapsed time of five to fifteen minutes for the administration of 10 to 20 cc. is suggested. The usual intravenous dosage is $3\frac{3}{4}$ - $7\frac{1}{2}$ grains in 10 and 20 cc. of diluent respectively. Rapid injection is associated with flushing and tingling of the face and neck, palpitation, heat, nausea and chest discomfort. Some reactions border on the violent. These occurrences should be indications for an immediate decrease in the rate of administration. Aminophyllin ($7\frac{1}{2}$ grains) in 20 to 50 cc. of 50 per cent glucose often is more beneficial than the plain dilution. This drug can be used advantageously in the patient who is epinephrine-fast. It is wise, however, to use the smaller dosage of aminophyllin ($3\frac{3}{4}$ grains) if the patient has never previously used this medication. The tolerance possessed by the patient and his response to the use of this drug determines the future dosage, interval and the rate of injection.

Orally, the drug is available in tablet form (usually $1\frac{1}{2}$ -3 grains) either alone or in combination with other medications. The dosage interval can be established at about every four to six hours. Enteric coating provides delayed absorption and extends additional relief to some individuals. The routine administration of this medication may be used as a measure of prevention of the acute asthmatic attack.

Rectal administration employs $3\frac{3}{4}$ to $7\frac{1}{2}$ grains

of aminophyllin either in suppository form or the installation of the usual dosage contained in 10 to 20 cc. of fluid as a retention enema. When given rectally, there is more rapid absorption, less nausea and less unpleasantness than the use by the oral route.

Oxygen.—This material is prescribed for patients with severe asthma and is used in 50 to 70 per cent concentration as long as there are indications for its inclusion in the therapeutic schedule. Administration is by tent or nasal catheter. Masks are not suitable for continuous oxygen therapy. Oxygen may not provide immediate relief of dyspnea, but it does accomplish the specific purpose of relieving the functional emphysema of the lungs of these asthmatic patients. Administration by tent requires a flow of not less than 10 liters per minute. The flow of oxygen by nasal catheter should be 5 to 7 liters per minute. The important, often overlooked feature of oxygen use is that no apparatus should be used which requires any physical effort for inhalation of the therapeutic agent. The use of helium-oxygen mixture (80 per cent-20 per cent respectively) permits less physical effort for adequate inspiration. The gaseous mixture may be used at regular, timed intervals² or as above described for oxygen alone.

Additional means of bronchial relaxation are offered through the medium of anesthesia. Equal parts of ether and oil as a retention enema are employed when refractoriness to other measures seems imminent. Oxygen administration is a wise adjunct to the use of this preparation. The mixture dosage varies from 4 to 7 ounces for the adult patient and may be repeated in six to eight hours. The patient thus gains needed rest even though the apparent dyspnea may continue. Response to epinephrine is usually re-experienced upon the conclusion of the anesthetic.

Narcotics.—Morphine has no place in the emergency therapeutic program for asthmatics. Its depressant action upon the respiratory center and its abolishment of the cough reflex are the main reasons for its exclusion. All too frequently, morphine administration will convert a minor emergency into one of extreme seriousness and dire outcome. Not all narcotic drugs are to be so condemned. Demerol, in a dosage of 25 to 100 mg. may be cautiously administered for bronchial relaxation. Demerol has an advantage of having marked spasmolytic action associated with a reduction in psychic tension. The drug is more efficacious if given subcutaneously than if used orally in tablet form. Intravenous administration is not advised because of the unpleasant side

effects of nausea, dizziness and possible syncope. Though demerol has atropine-like properties, it does not dry and thicken secretions as does atropine. Prolonged demerol usage is not advised because of the probability of habituation and addiction. Brown⁵ considers the combined use of dilaudid grains 1/40, 1 cc. epinephrine 1-1,000 and 1 cc. caffeine sodium benzoate a "life-saving measure" to some severe asthmatics. These materials, in the same syringe, are injected subcutaneously in a dosage of 0.1 cc. at one minute intervals until the quantity has been given or until relief is experienced. The question arises as to whether the dilaudid or the epinephrine is the effective agent herein.

No sedative should be prescribed with the thought of relieving the bronchial constriction by this means. Drug sensitivity should be foremost in the mind of the prescriber because such sensitivity can easily add to the burden already carried by the uncomfortable patient. Rest can be provided by the intramuscular use of sodium phenobarbital in a dosage of 2 to 5 grains. This drug must be given alone in the syringe to prevent solution precipitation. Chloral hydrate, bromides or chloratone may be used in appropriate oral or rectal dosages. Aspirin sensitivity in the asthmatic is well known. This salicylate is not a drug of moderation in asthma—it either is a distinct benefit or it produces increased bronchial compression.

Expectorants liquify the bronchial secretion and tend to loosen mucous plugs. Intravenous sodium iodide in a dosage of 31 grains has been advised, though personal experience reveals no appreciable benefit from this particular agent. Potassium iodide, in various oral forms, is of distinct advantage in prevention of acute exacerbations of chronic asthma. Atropine is not used in bronchial asthma because of its tendency to decrease mucous production or increase its tenacity.

Recent commercial literature has thrown the light of publicity upon the antihistaminic agents—benadryl and pyribenzamine. Glowing reports of results obtained with these drugs would lead to the belief that 60 to 80 per cent of asthmatics can obtain adequate relief through their administration. Actual experience reveals that few severe asthmatics obtain any benefit from benadryl or pyribenzamine. In dosages of 200 to 300 mg. daily the asthmatic cycle is not materially nor consistently interrupted.

Accessory Therapy

Antibiotics.—The best results in penicillin usage have been obtained in bronchial asthma in which acute infection was present due to pneumococcus

or hemolytic streptococcus organisms. Barach et al.³ have reported their encouraging results with inhalation of penicillin aerosol in a variety of pulmonary infectious processes. Intrinsic asthmatics, wherein bacterial infection is assumed to be the etiologic agent, are disappointing in their response to penicillin. Oral or intramuscular use of penicillin in these instances has not proved to be of appreciable benefit. This may be due to the insensitivity of the organism or a failure of technic. Better results are noted from prolonged inhalation of higher dosages rather than with intensive short courses. Penicillin in high concentration is irritating, though as much as 250,000 units per cc. have been nebulized and inhaled without lung injury. The usual inhalation dosage is 250,000 units per day, with a concentration of 50,000 units per cc. The effective dosage, however, will be dependent upon the type of pulmonary pathology being treated. Rinsing the mouth and throat with water is a precaution to be observed. The apparatus for inhalation therapy must be satisfactory and allow nebulization during the inspiratory cycle. Penicillin aerosols diffuse from the respiratory tract into the blood stream.

Oral sulfonamid therapy has been disappointing in bronchial asthma of the "infectious" type. Because of its solubility and lack of irritation, sodium sulfathiazole (1 to 5 per cent solution) is recommended for nebulization. A dosage of 0.1 to 0.2 gm. thusly can be administered in a twenty-four hour period. The physician must be on the alert for sensitivity to these drugs.

Streptomycin has been used in a daily nebulized dosage of 500,000 units dissolved in 20 cc. of physiologic saline. Combined penicillin and streptomycin nebulization may be indicated depending upon the bacteriology of the infectious process producing the asthma. It must be remembered that the employment of antibiotics is not advised nor indicated in the severe, uncomplicated extrinsic bronchial asthma. Their use is limited, with caution, to those instances of proved infectious etiology.

Bronchoscopy.—There is no universal agreement among clinicians concerning the use of this procedure in severe bronchial asthma. Relief secured by this measure results almost entirely from the removal of secretions and mucous plugs. The operation is not a pleasant one, but results are often spectacular in the asthmatic patient who is rapidly growing worse. Caution should be employed in the selection of an anesthetic to insure the use of one to which the patient is not markedly sensitive. Autopsy reports tend to show that fatalities from bronchial asthma are associated

with blockage of the tracheo-bronchial tree with a large quantity of tenacious secretion. Clinical judgment will best determine whether this diagnostic and therapeutic measure should be used more often and earlier in the average asthmatic crisis.

Psychotherapy.—Severe asthma may show satisfactory response with almost any change of therapy or therapist. The advantage thus gained can often be maintained by a continuation of proper medication allied with encouraging psychotherapy. Intense dyspnea may carry with it the fear of impending death. Thorough explanation in understandable meanings and terms seldom fails to be of some encouragement to the most uncomfortable patient. Continued mental rest should be maintained not through the simple expedient of repeated sedation. Sensible discussion, illustrative advice and assurance of eventual relief will tend to provide a better outlook for the patient. Immediate and attentive nursing care should be in the hands of persons other than the family of the patient.

Preventative Therapy

Though this section may not be indicated in a discussion of emergency therapy of asthma, a brief mention of some features for prevention is advisable. Environmental correction or adjustment with suggested dietary management is of primary importance. Such elimination or addition is based upon a complete history, physical examination and investigation of allergic and other causative features. Laboratory and clinical aids should be employed to assure a thorough survey upon which can be based future therapeutic measures and suggestions. Maintenance of a good nutritional state is an important part of chronic asthmatic therapy, just as in any debilitating illness. Hyposensitization should be instituted for those environmental factors which cannot be satisfactorily avoided by the patient. A change of climate is indicated only in the rare patient.

Discussion

The foregoing paragraphs have been written to present suggestions to the attending physician in the care of the acute asthmatic patient. It must be realized that all the presented measures are not applicable to any single problem. Individualization of therapy must be employed and adjustment of medicinal type and dosage must be accomplished to suit the particular occasion.

Though it may be somewhat repetitious there are a few remarks that can be stressed. When a diagnosis of acute bronchial asthma has been made:

1. Epinephrine hydrochloride 1-1,000 should be the drug of choice in offering relief to the patient. A dosage of 0.25 cc. may be repeated at thirty minute intervals for four to six injections, if necessary. Subsequent dosage interval will be dependent upon the severity and persistency of the symptoms. Contraindications for larger dosages or continued use of the drug will be evidenced by a persistently rapid pulse rate, nervousness, headaches, and failure to respond in a beneficial manner.

2. In association with the use of epinephrine or in substitution for it, aminophyllin intravenously holds more promise than more radical measures. Slow, cautious administration of 7½ gr. in 20 cc. fluid is advised. This may be repeated in four to six hours if the necessity is evident.

3. Oxygen inhalation by nasal catheter at a rate of 5 to 7 liters per minute can be instituted with the above medication.

4. Maintain an adequate fluid intake and balance. Intravenous saline or glucose may be necessary.

5. Do not depend entirely upon any oral medication to relieve the symptoms of acute, severe bronchial asthma. Ephedrine or aminophyllin orally are best used as routine measures of prevention.

6. Nebulization of epinephrine 1-100 should be employed in much the same light as oral medication, i. e., as a preventative aid.

7. Do not prescribe morphine. Demerol is far superior in its spasmolytic action and possesses a greater margin of safety.

8. Do not rely upon antihistaminic drugs (benadryl and pyribenzamine) to release the bronchial constriction of asthma. Such reliance will lead to disappointment.

9. Consider environmental, dietary and general corrective measures for future attention.

Summary

Emergency therapy of bronchial asthma is a problem with many variations. It is not necessary to lose valuable time in observation of the effect of any prescribed medication for several hours. Necessity of close observation and discontinuance of noneffective measures cannot be overemphasized. An injustice to the patient is done if the physician merely prescribes routine procedures and returns in a matter of hours for readjustment of his therapeutic schedule. The proper medication at the opportune time can easily mean the difference between continual discomfort and the pleasure of relief. In the same breath, caution must be exercised to avoid over treatment

and the use of measures that fall into the "heroic" category. Brief discussion is given to those procedures of personal preference. The wise use of suggested therapeutic procedures, a conservative plan of continued care and an adjustment of environmental or dietary necessities will tend to provide satisfactory relief to the patient with severe bronchial asthma.

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THE DIAGNOSIS AND TREATMENT OF SALIVARY CALCULI

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Abnormal lesions of the mouth, whether surgical or nonsurgical, come within the scope of the otolaryngologist, as such conditions may cause referred pain or other symptoms in either the ear or throat. Salivary calculi of all types, but especially those of the parotid and submaxillary glands are definitely in the otolaryngologist's field. The gratifying results following proper removal of such calculi merit serious consideration of this problem.

Case reports of salivary calculi are quite numerous in medical literature. The etiology of these calculi, although still uncertain, has been variously ascribed to oral sepsis, dental caries, gout, systemic infections, and endocrinopathies. There are two main etiologic theories to be considered. According to the first theory, the inflammatory processes in the gland itself cause the formation of calculi; this assumption is supported by such investigators as Küttner, Hanzel and Krüiss. They believe that epithelia of the glands and their ducts, which are destroyed under the influence of salivary congestion (Graille), are likely to collect in lumps and so form a nucleus for concretum formation. Additional deposits cause the stone to grow larger progressively. The inorganic salts present in the saliva can become crystallized out and laid down around the foreign material as a center.

According to the second theory, the calculi are of an inflammatory and particularly a bacterial

nature. This view is supported in the studies and investigations of Maas, Klebs, Galippe and later by Noeslund¹⁰ and Söderlund. In Söderlund's paper, he first associated salivary calculi formation with actinomycotic infection and later reported 41 cases in which actinomycetes were present. If the actinomycotic theory of salivary calculi is true, one would expect to see at least an occasional case of actinomycosis of the gland itself. None of the cases in this presentation showed any evidence of salivary gland actinomycosis.

It is quite definitely agreed that the submaxillary gland and its duct are the most frequent locations of salivary calculi. It has been considered that the submaxillary gland is more susceptible to external trauma, bacterial infection, and injury to Wharton's duct. According to Henke¹² the high mucoid content of the submaxillary gland is responsible for the predominance of calculi in this gland. The parotid gland contains no mucin. Henke assumes that the mucous content enhances the deposition of salts either upon bacterial or epithelial debris.

Certain anatomic peculiarities predispose the submaxillary gland to calculi formation. These include irregularities and diverticuli in the excretory duct of the submaxillary gland (F. Merkel). These irregularities serve as sites for secretory stasis, colonization of the micro-organisms with eventual stone formation. According to Zimmerman, the first diverticulum of this kind is located 17 mm. below the caruncular surface; they are rather close together, are quite numerous, and do not begin to decrease in number until about 12 mm. from the orifice.⁹

Other factors which appear to contribute to the greater incidence of calculus formation in the submaxillary gland might be mentioned that the greater portion of the gland is situated at a lower level than the duct itself. This obviously tends to slow up even more the flow of saliva from the gland to its point of exit below the tongue.

Gravity, which would ordinarily aid in spontaneous expulsion of these calculi in many instances, cannot, therefore, influence the process in this locality. Then, too, the duct is the longest of all the salivary ducts and with its upward slope to the frenum of the tongue, stones cannot be propelled through it with the same ease as in the other glands. Lastly, the opening of Wharton's duct, located as it is at the floor of the mouth behind the incisor teeth, becomes exposed to the trauma incidental to mastication. Foreign bodies can therefore be forced into the duct at this site.¹³

Anatomy

Complete and accurate descriptions of the sali-

vary glands may be found in any textbook of anatomy. Numerous anomalies and variations in size and shape may be encountered in the salivary glands as in other structures of the body.

Secretion from the glands in a twenty-four hour period has been estimated as varying from 1,500 cc. to 2,500 cc.

The chief operative hazards are injury to the lingual nerve when surgical intervention is indicated in the case of the submaxillary gland and injury to the facial nerves in its relation to the parotid gland. The ducts of the sublingual and submaxillary glands have a common opening, the sublingual caruncle, near the base of the tongue. This common orifice may on some occasions complicate the location of a calculus as to whether it is in the sublingual or in the submaxillary gland.²

Occurrence

Stones may be found both in the glands and in the ducts. The injection of radio opaque substances are sometimes helpful in determining this phase.

Calculi, however, are found with much greater frequency in the ducts than in the glands. They may appear in salivary ducts or glands at any age. Harrison reports a stone in the sublingual gland of a baby three weeks of age.⁶ Calculi are usually single but may be multiple. They may vary from a particle of dust to two inches in diameter. Hulke reports a stone weighing 67 gm.² The submaxillary gland is much more frequently involved than the others.

To date there are about 500 cases reviewed in the literature, and the incidence of occurrence is as follows: submaxillary, 86.2 per cent; parotid, 11.5 per cent; and sublingual, 2.3 per cent.⁵

Composition

According to the literature there appears to be a geographic variation as to the chemical constituents of calculi. On the average, calculi contain 65 per cent calcium phosphate; 25 per cent organic matter; 6 per cent calcium carbonate, traces of iron, magnesium and occasionally foreign bodies such as pieces of grass, wood, hair or glass.²

It has been noted that the incidence of salivary calculi is higher among individuals free from dental caries.⁴

TABLE II
Composition of Salivary Calculus

Ca per cent	P per cent	Ca/P	Mg per cent	Fe per cent	CO ₂ per cent	N per cent
30.55	17.27	1.765	1.05			
31.17	16.76	1.856				
31.47	17.34	1.826	0.967			
30.60	16.77	1.824	1.066			
29.82	16.21	1.840		0.0196	1.393	1.335
30.72	16.85	1.822	1.044			

Diagnosis

A complication of infection in the duct and gland is usually present. Obstruction of the duct by the stone builds up back pressure in the duct or gland. Very often the first symptom may be the presence of a small tumor mass in the duct or gland. Calculi occur more frequently in males than in females and usually in middle life.

Differential diagnosis may be made from tumors of the jaw or lymph glands; Ludwig's angina; salivary gland infections; tumors, cysts; enlarged lymph nodes; tuberculosis; lues, and actinomycosis.

The radiologist can be of greatest aid in substantiating the physical findings of digital examination and palpation.

Dental films in or under the mouth are of extreme importance as many calculi are overlooked in roentgenograms from the lateral aspect where they may be masked by bony structures.

When a calculus in the duct becomes large enough to impede the normal flow of saliva, a definite series of symptoms is initiated. The patient will observe that just before meals, when the normal flow of saliva is increased, the gland will become swollen and usually painful. This condition will slowly subside and in several hours the state will be apparently normal. This situation may continue for weeks, or even months. Eventually an inflammatory condition will occur with the presence of a purulent infection. Then the entire picture is altered. The swelling does not subside and the gland remains engorged with a "boardy" hardness and much pain and tenderness.

If Wharton's duct is occluded the floor of the mouth may be elevated to the occlusal level of the teeth. A febrile reaction is usually present with marked dysphagia.

Occasionally the calculus may be palpated with one finger within the mouth and the other externally.³

Treatment

The treatment of salivary calculi is usually considered to be surgical. Many small calculi, however, are passed through the ducts by the hydrostatic pressure of the saliva behind them.

Many small calculi may be passed after dilating the orifice of the duct. This is especially true in the case of Stenson's duct.²

Multiple calculi in the gland substance may usually be considered justification for removal of the gland.

Complications

Phlegmon and fistula occur with sufficient frequency to justify the reporting of this condition.

Childrey reports the case of a man, age 45, who reported with a painful swelling in the upper part of the right side of the neck, associated with a discharge of pus into the mouth. He stated that a half a pint of pus had been expectorated at the onset of the attack. Twenty years previously he had been burned on the right side of the mouth by a hot dental filling. Over this period of time he had frequent attacks of pain on the right side of his face. A calculus 6 by 7 by 10 mm. was removed surgically from Wharton's duct with complete relief of symptoms.⁸

Case Reports

The following case reports have been selected from private practice, from cases encountered while serving in the Army Medical Corps in World War II, and from the literature.

Case No. 1: This patient was seen in private practice. A man, age 42, L.U., reported because of a painful swelling beneath the right jaw. When seen, the mass was about the size of a hen's egg. There had been intermittent swelling and pain over a period of one year, always worse at meal time. The patient had failed to report sooner because of a "cancer phobia," his father having died at the age of 65 from cancer of the tongue. The floor of the mouth was markedly engorged and was pushed upward to the occlusal level of the lower anterior teeth. Palpation failed to reveal the presence of a foreign body. A Bowman lacrimal dilator No. 2 was passed into the duct and encountered a definite foreign body.

Under novocaine 2 per cent anesthesia an incision was made approximately 1 cm. from the caruncle and a calculus about the size of a clay marble was removed. Recovery was uneventful, and there has been no recurrence of calculi.

Case No. 2 was encountered in the EENT clinic at William Beaumont General Hospital in El Paso, Tex. Private A.J., age 24, was seen Nov. 2, 1942, because of a tender mass at the angle of the right jaw. The patient gave a history of unilateral "mumps" while at Camp Bowie, Tex., two months prior to the present date. He stated that the right side only was affected and after one month's hospitalization the "mumps" subsided. Palpation failed to reveal the presence of a foreign body but the laminogram showed a stone in Stenson's duct about 3 cm. from the caruncle. The calculus appeared to be pyramidal in shape, about 1 cm. in diameter at the base and about 2 cm. in length. The orifice of Stenson's duct was dilated with a lacrimal dilator and the stone could be "milked" toward the orifice. Since the base of the structure was presented first, a version was done and the apex brought to the caruncle.

The stone was grasped with a mosquito forceps and extracted. This patient was under observation for only two months after the removal of the stone, but had complete cessation of all symptoms.

Case No. 3 is taken from the literature and is presented here because of several unusual features.¹⁴

The patient, a white man 28 years of age, reported on May 8, 1937, complaining of having had a sore throat for about two weeks and of being able to swallow only liquids. He was holding his head to one side, and he appeared to have a great deal of pain.

His history was interesting. About twelve years before he was examined, while chewing a piece of grass he felt something stick into the soft tissue under the left side of his tongue. Since this accident there had been present more or less constantly a painful area under this side of his tongue, which became more disagreeable on eating. About six years before he was examined, a painful abscess formed in this area, which ruptured spontaneously within about five days, giving him relief. This area drained foul pus for about a week or ten days. Since the healing of this abscess there had always appeared a somewhat painful swelling under the tongue when he ate savory foods. This swelling subsided within about one-half hour, with relief. He had sought relief from several physicians, relating to them the story of having stuck a piece of grass under his tongue. None of them placed credence in his story, and they treated him for an ordinary infection of the cervical glands, giving him general and local medication. About two weeks before I examined him (twelve years after the accident), the area under the left side of his tongue became swollen and painful after he ate pickles. The swelling failed to subside and became progressively greater and more painful, and he was unable to eat any solid food. The sight or odor of food increased the intensity of the pain. The swelling had become so painful that it was difficult for him to even attempt to open his mouth.

On examination there was noted a tender, somewhat fluctuant mass about 1½ inches (3.7 cm.) in diameter in the left submaxillary area just anterior and medial to the angle of the jaw. The patient could open his mouth but little and then with much pain and difficulty. The tongue and the floor of the mouth on the left side were elevated. The tonsils, teeth and gums showed no evidence of infection. In the floor of the mouth just medial to the left lower second molar was a pale mass about three-fourths inch (1.8 cm.) long,

which gave the impression of being the pointing of an abscess. Pressure on this mass caused pus to exude from the orifice of the duct of the left submaxillary salivary gland. No doubt there was an abscess in or about the gland which opened into Wharton's duct. The history was more or less typical of partial blockage of the salivary duct and suggestive of a stone in the duct.

A roentgenogram of the left submaxillary area showed a shadow in the soft tissue at the location of the lower second molar. This shadow is shown in an illustration and is suggestive of a stone in the submaxillary gland, apparently in or near the main duct. The roentgenogram shows the shadow of the calculus just below the second molar. The picture was taken at an angle to show clearly the left submaxillary area.

An incision about three-fourths inch (1.8 cm.) long was made in the floor of the mouth parallel to the teeth at a location just above the shadow that was shown on the roentgenogram. An abscess cavity was encountered, from which was expressed about 2 drachms (7 cc.) of thick yellow pus. When the abscess cavity was probed, a hard stonelike mass was felt. By means of a blunt ring curet aided by external pressure on the submaxillary gland, a stone containing a piece of grass was dislodged and expressed. The stone, measuring 3 by 5 mm. surrounding a piece of grass 6 mm. long, was shown enlarged in this picture.

After the opening of the abscess and the removal of the stone the patient promptly got relief. He was able to open his mouth and to drink with almost no discomfort. The incision healed without complications, and he has remained symptom free. A communication from him two months after the operation stated that all discomfort disappeared about one week after the removal of the stone and that there had been no recurrence of symptoms.

Summary

1. Salivary calculi do occur with relative frequency.
2. The submaxillary gland and Wharton's duct are most frequently affected.
3. The treatment of choice is surgery.

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Discussion

George J. Pearson, M.D., Burlington: Dr. Quinn has covered everything of importance both in my experience and that I could find in the literature. Of lesser importance I would mention x-ray therapy, not to recommend but to question its use. The only instance of its use that I know of was a boy who had had recurrent calculi of the left parotid which usually took care of themselves. While in the service he had one and was treated by x-ray. Dosage was sufficient to give a violent reaction and to loose the hair of the area treated, but the gland did not completely atrophy. He has passed another stone since returning to civilian life.

In my hands a whale bone eustachian tube dilator is more acceptable to the patient and as efficient in probing the ducts as a metal lacrimal dilator.

The external surgical approach will be used only as a last resort by any of us living in a small town where we are apt to meet on the street the victim of a facial paralysis or salivary fistula resulting from the extirpation of a stone or gland.

AMERICAN PUBLIC HEALTH ASSOCIATION

The American Public Health Association announces its seventy-fifth annual meeting as taking place in Atlantic City, N. J., October 6-10 inclusive, 1947. Helping the Association to celebrate its seventy-fifth annual meeting will be the following organizations:

- American School Health Association.
- Association of Maternal and Child Health Directors.
- Association of Reserve Officers of the U. S. Public Health Service.
- Association of State and Territorial Health Officers.
- Conference of Municipal Public Health Engineers.
- Conference of Professors of Preventive Medicine.
- Conference of State and Provincial Public Health Laboratory Directors.
- Conference of State Directors of Health Education.
- Conference of State Directors of Public Health Nursing.
- Conference of State Sanitary Engineers.
- National Committee of Health Council Executives.
- Public Health Cancer Association.
- Exhibits and the scientific program will point up progress in public health during the organization's existence.

AMERICAN ACADEMY OF DERMATOLOGY AND SYPHILOLOGY

The sixth annual meeting of the American Academy of Dermatology and Syphilology will be held in Chicago from Saturday, Dec. 6 through Thursday, Dec. 11, 1947, it is announced by Dr. Earl D. Osborne, secretary-treasurer of the Academy, 471 Delaware Ave., Buffalo, N. Y.

The principal sessions will be held at the Palmer House, with special courses in histopathology and mycology scheduled for December 6 and 7, at the Medical Schools of the University of Illinois and Northwestern University. Teaching clinics will be held at the University of Illinois College of Medicine in Chicago on the afternoons of December 8, 9, 10.

Extensive scientific and technical exhibits will be set up in connection with the meeting. Dr. Marcus R. Caro of Chicago heads the committee on the scientific exhibits, and Dr. Clyde L. Cummer of Cleveland is in charge of the technical exhibits.

Special courses in histopathology, mycology, x-ray and radium therapy, bacteriology of the skin, mucous membrane lesions, industrial dermatoses, specific granulomata, and dermatoscleroses will be held under leaders in these various fields.

Subjects to be discussed in symposia will include: physiology and chemistry of the skin; physical and radiation therapy; cutaneous allergy; syphilis; pharmaceutical therapeutics; and diagnostic methods in dermatology. Other features will be a round table discussion on dermatopathology and a panel on management of skin diseases.

STATE DEPARTMENT OF HEALTH

Nathan L. Diering

PREVALENCE OF INFECTIOUS ENCEPHALITIS

Encephalitis in Iowa

On Sept. 15, 1947, the Department received a report from A. A. Johnson, M.D., of Council Bluffs, of eight cases of infectious encephalitis recently under his care or seen in consultation with other physicians. The patients, all adult males, varied in age from 20 to 72 years. Two of the patients lived in Council Bluffs, five were from farms in Pottawattamie County and one from Cumberland in Cass County.

Dr. Johnson stated that onset of illness was acute with fever as high as 105 to 106 F., headache and neck stiffness. There was no sign of paralysis and with one exception, none of the eight had convulsions. The patients showed definite increase in the spinal fluid cell count. One patient died in an Omaha hospital; the others were recovering at the time of this report.

Cases of encephalitis numbering 15 have been notified to the State Department of Health thus far in 1947 (through September 15). One case was reported from Davis County in January, one from Polk County in February, one from Decatur County in May, one from Lee County in July, one case each from Des Moines and Johnson Counties in August, and one case from Plymouth County during the first week of September.

Encephalitis in the United States

A report from the Division of Public Health Methods of the U. S. Public Health Service for the week ending Saturday, Sept. 6, 1947, states: "Of 40 cases of infectious encephalitis, 11 occurred in North Dakota and 9 in California, and of 140 cases reported since August 2, 48 occurred in North Dakota and 34 in California, the latter principally in the San Joaquin counties."

Symptomatology and Diagnosis

W. McDowell Hammon, M.D., of the George Williams Hooper Foundation, California, presenting the subject of encephalitis at a meeting of the Woodbury County Medical Society in Sioux City in 1942, enumerated chief symptoms and signs as follows: "fever, malaise, vomiting, head-

ache, abdominal pain, neck rigidity. Patients may be stuporous, violent or in a coma. The spinal fluid cell count varies from 50 to 500. Diagnosis is established through isolation of virus, demonstration of neutralizing antibodies following recovery and by pathologic findings."

Muckenfuss¹ states: "Although there may be a short period of invasion, the onset is usually sudden, with fever, headache, occasionally vomiting, stiff neck, and pleocytosis in the spinal fluid, usually in the neighborhood of 200 to 300 cells. Mononuclear cells predominate, except apparently in equine encephalomyelitis where neutrophils seem to be preponderant."

Mosquito Vectors

Hammon and Reeves² have reported the isolation of the virus of western equine encephalomyelitis and of St. Louis encephalitis from mosquitoes, notably the species *Culex tarsalis*. These workers believe there are many mosquito vectors and that the seasonal prevalence of encephalitis corresponds with that of *C. tarsalis*. They have demonstrated furthermore that there is a vast reservoir for the virus of encephalitis in nature. Antibodies against the virus have been found in the serum of domestic animals (cow, horse, dog) in poultry, and in wild birds and mammals.

Control Measures

Meyer and Eddy state: "The use of modern mosquito control procedures, at least in the United States, should afford better protection against all the arthropod-borne neutropic virus infections than can specific vaccination against one particular virus. Methods of control for the principal mosquito vectors are now the subject of an intensive study being carried on by the California State Department of Public Health under a grant from the state legislature."

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POLIOMYELITIS

Poliomyelitis in the United States

The Division of Public Health Methods of the United States Public Health Service released the following statement pertaining to the reported incidence of poliomyelitis in the nation as a whole for the week ended Sept. 6, 1947:

"A sharp outbreak of poliomyelitis has been reported in Akron, Ohio, with an unofficial estimate of 205 cases as of September 7, a figure no doubt including cases with onsets during the latter part of August, as only 39 cases had been officially reported in Summit County up to August 23 (17 cases reported for that week). The United States Public Health Service is cooperating with the state and local health authorities in combating the epidemic.

Contrary to expectations based on the reports for the week ended August 30 that a decline was probably due, this outbreak in Ohio and increases in a few other states brought the total to 826 cases for the week ended September 6 as compared with 602 for the preceding week and 531 for the next earlier week. The net increase of 224 cases during the current week was accounted for almost entirely by increases in 3 states: Ohio, 39 to 195; New York, 53 to 95; and Indiana, 7 to 28. Other increases were reported in Minnesota, 19 to 29; Connecticut, 13 to 23; and New Jersey, 26 to 34.

The most important decreases occurred in Illinois, 93 to 87; Michigan, 59 to 45; Delaware, 28 to 6; and Idaho, 12 to 5. Current figures for a few other states which have been reporting the largest numbers of cases are as follows (last week's figures in parentheses): Illinois 87 (93), Pennsylvania 31 (33), California 21 (25), and Rhode Island 14 (18).

Poliomyelitis in Iowa

Cases totaling 96 have been reported to the State Department of Health thus far in 1947 (through Saturday, September 13), compared with 349 cases for the corresponding period (through September 14) in 1946. Reports in August and for the first half of September of the current year and for 1946 are as follows:

Month	1947 Cases Reported	1947 Expected Cases	
		9-year average '38-'46	1946 Reported Cases
August	48	12	191
Sept. (through 13)	21	34	72 (through 14)

Counties reporting 2 or more cases of poliomyelitis to date in 1947 (through September 13) are: Polk, 13; Woodbury, 11; Jones, 6; Dubuque, 4; Wapello, 4; Wright, 4; Cherokee, 3; Humboldt, 3; Page, 3; Pottawattamie, 3; Story, 3; Taylor, 3; Calhoun, 2; Clinton, 2; Dallas, 2; Fremont, 2; Kossuth, 2; Plymouth, 2; Scott, 2. Each of twenty other widely scattered counties have reported but one case.

SUBSCRIPTIONS TO HYGIEIA

The American Medical Association is making a special subscription price offer to physicians and dentists and their families which is good until Jan. 31, 1948. The rates are \$1.25 for one year instead of \$2.50, and \$3.00 for three years instead of \$6.00.

The Woman's Auxiliary receives credit for all subscriptions placed through it. Any physician wishing to renew his subscription, or to place an order for *Hygeia*, is asked to do so through the county medical society Auxiliary so that it may have credit. If there is not a county Auxiliary, orders can be placed through the state chairman, Mrs. John F. Veltman of Winterset.

MORBIDITY REPORT

Disease	Aug. '47	July '47	Aug. '46	Most Cases Reported From	
Diphtheria	4	15	26	Hamilton, Polk, Winneshiek, Woodbury	
Scarlet Fever	48	44	33	Clinton, Henry, Polk	
Scarlet Fever	8	0	3	Black Hawk (2), Decatur (2), Audubon (1), Des Moines (1), Linn (1), Ringgold (1)	
Smallpox	0	0	0	.....
Measles	84	269	58	Linn, Scott, Winneshiek	
Whooping Cough	176	143	169	Black Hawk, Cerro Gordo, Clinton, Dubuque	
Brucellosis	140	119	44	Black Hawk, Polk, Webster	
Chickenpox	12	96	26	Dubuque, Linn	
German Measles	2	9	3	Tama, Washington	
Influenza	0	0	0	.....
Malaria	2	1	21	Floyd, Polk	
Meningitis	1	4	6	Scott	
Mumps	9	27	49	Linn, scattered	
Pneumonia	0	1	*1608	.....
Poliomyelitis	48	9	204	Polk, Humboldt, Page, Woodbury	
Tuberculosis	46	46	65	For the State	
Gonorrhea	160	133	184	For the State	
Syphilis	318	237	158	For the State	

*Delayed reports.

The JOURNAL of the Iowa State Medical Society

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First State Meeting on Medical Service and Public Relations

First ventures are usually a source of concern to the planners, but upon looking over the program for the first state meeting on medical service and public relations planned by the committee of that name, the editor feels there is little cause for alarm. The caliber of the program is such that a large attendance seems certain.

The committee has had many problems thrust upon it since its conception in 1943; it has absorbed several other committees of the State Society and greatly amplified the scope of its service. Each of the nine members is responsible for a particular phase of the work, and this division makes it possible for the committee to cover as broad a field as it does.

Members of the committee have long been anxious to more fully acquaint the doctors of the state with all it is doing. In line with that, the committee has planned a state meeting to be held on Thursday, October 9, at the Hotel Fort Des Moines in Des Moines. The trustees have approved the meeting and have authorized definite travel expense for a representative from each county medical society as well as state society officers.

A program of the meeting will be mailed to every doctor in the state, and any interested person may attend. A copy of the program may also be found in News Notes on page 469 of this JOURNAL.

We believe a meeting of this type affords a real

opportunity for the county medical societies to bring in their questions on various activities of the state society; to discuss methods and procedures; and to become familiar with actual as well as contemplated programs. We feel the round table discussions to follow the formal papers will be most helpful in down-to-earth questions and answers, and we hope every county medical society will be represented.

Fifty-Year Club

In a small and unobtrusive file box in the state office is probably as pretentious a record of service to Iowa and its people as can be found anywhere in the state. It is the record of the Fifty-Year Club of the Iowa State Medical Society.

Established in 1941 at the suggestion of Dr. Robert L. Parker of Des Moines, the club's membership now totals 177, of whom 139 are living. In their half century of service, these physicians have watched medicine arise from its seeming infancy to the skilled science it is today, and their accrued 8,850 years of service to the profession have had no small part in helping it become that.

They have followed both the American Medical Association and their own state's College of Medicine through half of those institutions' lifetimes, contributing to as well as watching their development, but more important—they have lived with and carried their hosts of patients and friends through physical and mental ills from infancy to the declining years of their lives.

Recognition of these men by the State Society is modest, perhaps too much so, but it is given in the spirit of honor and gratitude which they deserve. Their reward cannot possibly be embodied in the small gold pin which reads "Iowa State Medical Society 50-Year Club" nor in the framed letter which bespeaks official membership. It must come through the deep-seated feeling of satisfaction and accomplishment which only a life of unselfish service can bring, and through the deep and lasting friendships it has created with those with whom they have worked.

Hence, to you, the Fifty-Year Club Members of Iowa, the men who have devoted your lives to the furtherance of the medical profession, your fellow physicians extend their salute.

New Books Available

The JOURNAL office is the recipient of a goodly number of new books per year, each of which is given to a State Society member interested in that particular subject if in exchange he will submit a review for the JOURNAL. It is natural that

there has been a tendency to localize distribution to Des Moines and vicinity because of ease in contact and knowledge of special interests.

It is our earnest desire, however, to give doctors throughout the state an equal opportunity to receive volumes fresh off the press and to publish their comments concerning them. It will be appreciated if any physician interested in obtaining a book will write a letter or card to JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, 505 Bankers Trust Building, Des Moines 9, stating his field of preference. Every effort will be made to supply him with a book of his choice at the earliest opportunity.

Also, physicians occasionally request a particular volume. If a review copy is not sent to us, we are happy to request one from the publishing company. To date, all such requests have been fruitful.

In length, reviews are usually one typewritten page, double spaced, but this of course may vary with the individual's needs and desires. A period of four to six weeks is allowed for reviewing the book, and it is advantageous if this schedule is adhered to; otherwise, the supply of JOURNAL copy is not equalized throughout the year.

Increase in School Enrollment

An interesting phenomenon which is a direct result of the war and the postwar increase in birth rate is the record number of children to be enrolled in the schools. The Metropolitan Life Insurance Company¹ has predicted that more than 5,000,000 children will probably be added to the elementary school population of the United States within the next decade. The number of 6 year olds has been increased slowly in recent years and now totals nearly 2,500,000. It is anticipated that this number will increase to 2,900,000 in 1949. In 1950 and in 1951, however, the new contingents of 6 year olds will fall off somewhat—reflecting the decline in the birth rate in 1944 and 1945—but they will then resume their increase until they number nearly 3,300,000 in 1953. The latter figure is 40 per cent higher than that for 1945.

Such an alarming increase will require careful planning to assure proper education of these children. Such a program should include child health guidance and some program of health teaching. Physicians connected with or interested in the schools of Iowa would do well to give thought to these problems in order that health education will advance along with the increased number of pupils.

Lead Poisoning

An unusual occurrence, the contracting of lead poisoning by shooting gallery workers, was reported in the August, 1947, issue of *Industrial Medicine*. Four such cases, none of them fatal, developed among attendants at galleries in Baltimore. The first had come to the attention of the City Health Department in 1942 when a physician submitted a specimen of the patient's blood for laboratory analysis. This patient was hospitalized and the record indicated a two-year span of work in a shooting gallery and a diagnosis of chronic lead poisoning. Another attendant at a shooting gallery was found to have lead poisoning when a specimen of his blood was submitted to the City Health Department laboratories for analysis on March 18, 1946.

Following this diagnosis, air tests were made at the shooting gallery where the patient had been working, and it was determined that significant amounts of respirable lead dust are released into the air upon the impact of lead bullets against a steel target. Two more persons working at a different gallery were found to have lead poisoning in April, 1946. One was very ill and remained in a hospital for more than two weeks. This man had just been assigned additional "clean-up" duties after the discovery of the first case there, and the severity and acute nature of his illness probably resulted from these exceptional exposures to lead dust.

Environmental studies of this and thirteen other indoor shooting galleries in Baltimore revealed that the atmospheric concentrations of lead dust exceed many times the permissible safe limit. The extent of the air pollution was substantiated upon examination of settled dust on horizontal ledges near the firing positions in a number of galleries. It was found that the major portion of the dust usually was composed of small metallic lead particles. Since the occurrence of poisoning by metallic lead is very uncommon, the composition of the dust was determined chemically and the results confirmed by an x-ray diffraction examination made by Prof. J. D. H. Donney of the Department of Geology of John Hopkins University.

Pursuing the investigation further, the Division of Industrial Hygiene, with the assistance of the Division of Chemistry of the Baltimore City Health Department, fired experimentally eleven types of .22 and .38 caliber bullets supplied by leading small-arms ammunition manufacturers. All air tests made at the firing position showed excessive dust concentrations with the target located at a distance of 35 feet. Other data indicated that there was no apparent correlation be-

1. Statistical Bulletin, Metropolitan Life Insurance Company, June, 1947, p. 3.

SPEAKERS BUREAU

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SPEAKERS BUREAU ACTIVITIES

The Speakers Bureau is pleased to announce that two postgraduate courses will be presented this fall, and that five cancer institutes have been planned. Postgraduate courses will be given at Fort Dodge and Sac City; cancer institutes at Des Moines, Fort Dodge, Ottumwa, Sioux City and Council Bluffs.

These courses and institutes are open to all physicians who are interested. Invitations will be issued to all doctors in the area surrounding each center, but admittance is not limited to these lists.

Programs for the different meetings are as follows:

CANCER INSTITUTE—DES MOINES

Tuesday, September 23, 1947

Main Ballroom—Hotel Fort Des Moines

3:00 p. m. Franklin E. Walton, M.D., St. Louis
Assistant Dean and Assistant Professor of Surgery, Washington University School of Medicine

Early Diagnosis of Carcinoma of the Stomach

4:00 p. m. Deward O. Ferris, M.D., Rochester
Surgical Section, Mayo Clinic
Carcinoma of the Kidney, Ureter and Bladder

5:00 p. m. Thomas J. Kinsella, M.D., Minneapolis
Clinical Assistant Professor of Surgery, University of Minnesota Medical School
Carcinoma of the Lung

6:30 p. m. Complimentary dinner

7:30 p. m. Deward O. Ferris, M.D., Rochester
Differential Diagnosis of Carcinoma of the Uterus

8:30 p. m. Leo G. Rigler, M.D., Minneapolis
Professor and Chief of the Department of Roentgenology and Physical Therapy, University of Minnesota Medical School
Slide Talk on Carcinoma of the Gastro-intestinal Tract

POSTGRADUATE COURSE—SAC CITY

Park Hotel

Dinner 6:30 p. m.—Lecture 8:00 p. m.

C. D. Gibson, M.D., Sac City, *Chairman*

Sept. 25 Thomas D. Throckmorton, M.D., and
Joseph M. Standefer, M.D., Des Moines
Surgery in Pediatrics

Oct. 9 L. S. McGoogan, M.D., Omaha
Obstetric Problems

Oct. 23 Speaker not yet scheduled

Management of Common Skin Disorders

Nov. 6 Speaker not yet scheduled

Diagnosis and Management of Arthritis

Nov. 20 Elmer L. DeGowin, M.D., Iowa City

New Therapeutic Agents

CANCER INSTITUTE—SIOUX CITY AND COUNCIL BLUFFS

Sioux City—Thursday, October 16—Hotel Mayfair

E. M. Honke, M.D., Sioux City, *Chairman*

Council Bluffs—Friday, October 17—Hotel Chieftain

J. G. Kruml, M.D., Council Bluffs, *Chairman*

Early Diagnosis and Treatment of Carcinoma of the Stomach

Pathology

Early Diagnosis and Treatment of Cancer of the Uterus

Use of Radioactive Isotopes in Their Application to Malignancies

CANCER INSTITUTE—OTTUMWA

Thursday, October 23, 1947

Hotel Ottumwa

S. F. Singer, M.D., Ottumwa, *Chairman*
Cellular Diagnosis

Hematology—Leukemias and Lymphoblastomas

Malcom Hargraves, M.D., Mayo Clinic

Diagnosis of Carcinoma of the Stomach

Pathology

William C. MacCarty, M.D., Mayo Clinic

CANCER INSTITUTE—FORT DODGE

Tuesday, November 4, 1947

Hotel Waukonsa

M. W. Burleson, M.D., Fort Dodge, *Chairman*

Cancer of the Gastro-intestinal Tract

Cancer of the Genito-urinary System

Cancer of the Head and Neck

Cancer of the Breast

Cancer of the Uterus

POSTGRADUATE COURSE—FORT DODGE

Hotel Waukonsa

Dinner 6:30 p. m.—Lecture 8:00 p. m.

E. F. Beeh, M.D., Fort Dodge, *Chairman*

Nov. 6 Common Gynecologic Problems

Speaker not yet scheduled

(Continued on page 469)

NEWS NOTES

from the

Committee on Medical Service and Public Relations

FIRST STATE MEETING

The first state meeting to be sponsored by the Committee on Medical Service and Public Relations will be held at the Hotel Fort Des Moines in Des Moines on Thursday, October 9. An official representative is being invited from each county medical society; his expenses will be paid by the State Society on authority of the Board of Trustees. State Society officers will also be asked to attend.

The meeting is planned in the hope it will present to the county societies a greater knowledge of the activities carried on by the committee. Formal talks will be given during the first part of the program, but the groups will gather into round tables about three o'clock in the afternoon to carry on a question and answer period of some of the more important phases of the work. The choice of subjects for the round table discussions will be left to the official county representatives.

The program for the day is as follows:

- 9:30 a.m. Address of Welcome
Harold A. Spilman, M.D., President
Iowa State Medical Society
- 9:40 a.m. Remarks
Fred Sternagel, M.D., Chairman
Committee on Medical Service and Public Relations
- 9:50 a.m. Veterans Home Town Medical Care Program
J. I. Fitzsimmons, M.D., Chief,
Outpatient Section, Veterans Administration, Branch No. 8
- 10:10 a.m. Present Status of Mental Hospital Situation in Iowa
Mr. E. W. Carlsen
Member, State Board of Control
- 10:30 a.m. Suggestions for Iowa's Public Relations Program
Mr. Thomas A. Hendricks, Secretary
Council on Medical Service of the American Medical Association
- 11:00 a.m. Rural Health in Iowa
E. E. Shaw, M.D., Committee Member
in Charge of Rural Health Problems
- 11:10 a.m. Hospital Survey and Construction in Iowa
Mr. Verne A. Pangborn, State Director
- 11:30 a.m. Medical Service Plans in the United States
Mr. Frank E. Smith, Director
Associated Medical Care Plans

- 12:15 p.m. Luncheon
Social Responsibilities
F. L. Feierabend, M.D., Kansas City
- 2:00 p.m. Public Relations and the Doctors of the Medical Society
Mr. John Henry, Public Relations Director
Des Moines Register and Tribune
- 2:20 p.m. The Doctor and Vocational Rehabilitation for Civilians
Ruth K. Nayfield, M.D., Medical Consultant
Vocational Rehabilitation Division
- 2:40 p.m. American Academy of General Practice
Robert C. McElvain, M.D., St. Louis
- 3:00-5:00 p.m. Round-table Discussions (Subjects to be selected by official county representatives)

POSTGRADUATE COURSE—FORT DODGE

(Continued from page 468)

- Nov. 12 Common Rectal Problems
Raymond J. Jackman, M.D.,
Mayo Clinic, Rochester
- Nov. 20 Office Urology for the General Practitioner
Harry C. Rolnick, M.D., Chicago
- Dec. 4 Common Fractures and Their Management
Herman F. Johnson, M.D., Omaha
- Dec. 20 Infant Nutrition
Speaker not yet scheduled

RADIO SCHEDULE

WOI—Wednesdays at 2:45 p. m.

WSUI—Fridays at 11:00 a. m.

- Oct. 1-3 The Pharmacists' Part in the Veterans Administration Home Town Program
Mr. Dallas L. Bruner, Secretary
Iowa Pharmaceutical Association
- Oct. 8-10 The Dentists' Part in the Veterans Administration Home Town Program
Dr. A. N. Humiston, Secretary
Iowa State Dental Society
- Oct. 15-17 New Concept of Treatment for Spastics
- Oct. 22-24 What Does Iowa Medical Service Offer?
Martin I. Olsen, M.D.
- Oct. 29-31 Venereal Disease Drama

VETERANS ADMINISTRATION

VETERANS ADMINISTRATION

Under the auspices of the Dean's Committee, a resident training program was organized in the Veterans Administration Hospital at Des Moines in June, 1946. The program has now been in operation for more than a year. The schedule presented gives the weekly meetings and seminars that are a part of the training program.

These meetings are open to all physicians. I take this opportunity to cordially invite the physicians of Polk County and all neighboring counties, and all physicians visiting in Des Moines to participate in these meetings. We believe they are worthwhile and shall be very pleased to have any physicians attend them. Why not drop in on us and get personally acquainted with the training program which is now under way?

J. J. Tyson, M.D., Chief Medical Officer

PROGRAM

Sunday

8:30 a. m.—General Medical Ward Rounds,
Chief Medical Service

Monday

8:00 a. m.—General Staff Conference (Staff
Room), conducted by services in rotation

Tuesday

10:00 a. m.—Medical Ward Rounds (Room 200)

3:30 p. m.—(Alternating) (Room 200)
Surgical-Pathologic Conference
Surgical Journal Club
Surgical Films

Wednesday

9:30 a. m.—Clinical - Roentgenologic Conference (Staff Room)

10:00 a. m.—Pathologic Anatomy Conference
(Laboratory). Discussion of autopsies

1:00 p. m.—Surgical Ward Rounds

Thursday

8:00 a. m.—Surgical Seminar (Room 200)

7:30 p. m.—Clinicopathologic Conference (Staff
Room), first and third Thursday of
each month
Medical Progress Club (Room 200),
second and fourth Thursday of each
month

Friday

11:00 a. m.—Medical Staff Conference (Room
200)

2:00 p. m.—Pathologic Anatomy Conference

LEAD POISONING

(Continued from page 467)

tween the amount of dust produced and the muzzle velocities, weights of the projectiles or composition of the bullets, and that the rise in temperature upon the impact of the bullet with the target was insufficient to volatilize the lead.

Later an unusual opportunity arose to study clinically and environmentally the effects of exposures of two weeks' duration when a large law-enforcing agency held its first target practice in four years. Pistols firing .35 caliber ammunition were used in eight galleries, each attended by a range master. At the conclusion of the practice period, blood specimens were obtained from the attendants and analyzed for lead. Although the blood of unexposed persons may contain about 0.03 mg. of lead per 100 mg. of blood, the results of the eight specimens showed blood lead content that ranged from 0.040 to 0.082 mg. Air tests were made in three of the galleries during actual practice and the results showed that the lead dust was from seven to sixty-six times the maximum allowable concentration (0.15 mg. per cubic meter of air) under the state and city regulations adopted pursuant to the authority of the state occupational disease control law.

Having established the nature of the exposure to lead dust in shooting galleries, the final phase of the investigation was devoted to developing a method for controlling the hazard. Exhaust ventilation principles based upon conventional designs were impractical because of the large volume of air required for the removal of the dust. A modified "push-pull" system was employed with an air curtain maintained at the firing line, while an exhaust fan operated behind the target. Following this installation, dust samples collected from the air disclosed that the concentration was well below the maximum allowable limit even when rapid firing was taking place.

Thus, it may be well for the physicians of Iowa to be cognizant of the existence of such poisoning among workers who are in constant contact with lead laden air and to consider it a possible cause of illness when examining such a patient.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS FRED MOORE, 634 40th St., Des Moines 12

President-elect—MRS. A. G. FELTER, Van Meter

Secretary—MRS CHARLES A. NICOLL, Panora

Treasurer—MRS. NOBLE IRVING, 4323 Ingersoll Ave., Des Moines 12

PRESIDENT'S MESSAGE

There probably has never been a time when so much responsibility has been placed upon the Auxiliary by organized medicine at national and state levels. Because of their confidence that the Auxiliary has the potentialities of making a distinct contribution in the areas that come within its program, it is more important that our leaders plan a definite, constructive program and that we extend the auxiliary organization in the state. Your officers and committee chairmen, who have been working toward that end, are counting on a full attendance at the fall conference and board meeting to be held in Des Moines on Monday, September 29. If this meeting is truly successful and moves us forward in our work, it must have had the interest and cooperation of all eligible members—county presidents and presidents-elect as well as officers and committee chairmen. When this reaches you, all our members will know that we have been working together on a definite program in which each county auxiliary member and member-at-large can share.

Another truly exciting meeting to which every Auxiliary member is invited is to be held in Des Moines. The Medical Service and Public Relations Committee of the Iowa State Medical Society has planned a state meeting for Thursday, October 9. Elsewhere in the *Journal* you will find more information about it. One glance at the program will tell you that it offers a fine opportunity to gain information on some of the most vital problems of the day. We want to be well informed and are grateful that the State Society members are including us in this meeting.

Mrs. Fred Moore.

STATE MEETING ON MEDICAL SERVICE AND PUBLIC RELATIONS

The Iowa State Medical Society in conjunction with the American Medical Association is taking a positive step in the interest of public relations by calling a meeting October 9, 1947, at the Hotel Fort Des Moines, Des Moines. All doctors and Auxiliary members are urged to attend. Each year the doctors are becoming more conscious of the vital part their wives have in the field of public relations. Since Auxiliary members have many contacts apart from Auxiliary work, their influence is widespread and their information on medical issues should be accurate and intelligent.

The program, which begins at 9:30 a.m. and continues to 3:15 p.m. with panel discussions, includes many topics which will offer excellent program material for Auxiliary members. Our president, Mrs. Fred Moore, and all the state officers anticipate seeing many doctors' wives in attendance with their husbands.

Some of the topics which will be discussed are: Veterans' Home Town Medical Care Program, Present Status of Mental Hospital Situation in Iowa, Suggestions for Iowa's Public Relations Program, Rural Health Problems, Hospital Survey and Construction in Iowa, Medical Service Plans in the United States, Health Councils, and Tuberculosis Survey Program.

There will be a luncheon at 12:15 p.m. at which F. L. Feierabend, M.D., Kansas City, Mo., will speak on "Social Responsibilities."

HYGEIA SUBSCRIPTION CONTEST

One of the aims of our Auxiliary is to have *Hygeia* in every physician's and dentist's office in the state of Iowa. *Hygeia* is read more than any other magazine in a doctor's waiting room.

The American Medical Association conducts an annual national contest and allows special rates to all physicians, dentists, and their families. The prices are \$1.25 for one year instead of \$2.50 and \$3.00 for three years instead of \$6.00.

The committee in charge requests every doctor's wife to send her subscription or renewal to her county chairman, or if she is a member at large, to the state chairman. The *Hygeia* contest begins September 1, 1947 and ends January 31, 1948. November 15 is a good deadline to set for submitting subscriptions since the holidays interrupt regular activities. When doctors renew their subscriptions to *The Journal of the American Medical Association* and to *Hygeia* simultaneously, credit in the national contest is forfeited unless specifically requested. We therefore urge each doctor's wife to check on her own subscription to *Hygeia*. Reduced rates make *Hygeia* an excellent Christmas gift, and many doctor's wives take advantage of this opportunity, thereby increasing the County Auxiliary's part in the national contest.

Every doctor's wife, whether she is an Auxiliary member or not, can help to put *Hygeia* in every doctor's office. We earnestly urge full cooperation in

this effort. For detailed information please write to Mrs. J. F. Veltman, State *Hygeia* Chairman, Winterset, Iowa.

HYGEIA

MRS. ARTHUR I. EDISON, *Chairman*

The Woman's Auxiliary to the American Medical Association has the opportunity of making the twenty-fifth anniversary of *Hygeia* an outstanding one. We should be able to reach the following goal by April, 1948:

1. Every Auxiliary member a subscriber to *Hygeia*.
2. *Hygeia* on the reception room table in the office of every doctor and dentist.
3. One meeting of the Auxiliary in every county devoted to *Hygeia*. (A brief history of *Hygeia* will be sent to every chairman in the fall to acquaint members with the background and purpose of *Hygeia* as determined by A.M.A.)
4. All school superintendents informed of the student group plan.
5. *Hygeia* exhibit used in conjunction with all public relations programs. (These can be secured by writing to the American Medical Association.)
6. *Hygeia* used as first aid material on all programs on health education.—*The Bulletin*, August, 1947.

LEGISLATION

MRS. BRUCE SCHAEFER, *Chairman*

Suggested program for State Legislative Chairmen:

1. An informed and alert Auxiliary membership:
 - (a) Continuous study groups on health and medical legislation, both state and federal.
 - (b) Discussion of up-to-the-minute news on medical and health legislation at every auxiliary meeting, led by the legislative chairman.
 - (c) Every member requested to learn and understand the A.M.A. Ten Point Health Program.
 - (d) Constant reading of legislative section of A.M.A. Journal and respective state medical journals.
 - (e) An active legislative committee in every county auxiliary, prepared to act when called upon.
2. Close consultation and cooperation with state medical society:
 - (a) Request periodic meetings with county advisory committee.
 - (b) Contact Congressmen and Senators when advised to do so.
 - (c) Every Auxiliary member a registered voter, and, equally as important, **THAT SHE GO TO THE POLLS.**

3. Education of the Public:

- (a) Suggest that state medical society organize a speakers bureau; encourage auxiliaries to use such speakers for lay organization meetings.
- (b) Request members to become active in women's organizations and serve on committees (especially health committees) when possible.
- (c) Use radio, newspaper and distribution of printed matter, extensively or limited, as advised by state medical society.
- (d) Advise members to give simple explanation of Government controlled medicine plan, and what it can mean to the nation and to the individual, in any group where this subject is discussed.
- (e) Sponsor debates in high schools and colleges, and provide material for debating when requested.—*The Bulletin*, August, 1947.

SPECIAL STUDY IN THREE COUNTIES

Miss Jessie Parker, state superintendent of public instruction, said recently that county-wide special education programs for handicapped children will be opened in three more counties this fall.

New counties in which such programs will be started, Miss Parker said, are Story, O'Brien and Benton. Programs previously started in Ringgold, Greene, Johnson, Washington and Cerro Gordo counties will be continued.

Originally started in 1939 with the installation of a few inter-communication systems and the school for crippled children who could not attend regular classes, the program now has expanded into six major fields.

W. A. Winterstein, director of the state department's division of special education, said the first step in instituting the new county-wide programs in Story, Benton and O'Brien counties will be to make a survey of every child of school age in each of the counties.—*Des Moines Register*, September 2, 1947.

1947 STUDENT NURSE RECRUITMENT CAMPAIGN

An immediate goal of 45,000 student nurses to be enrolled in the nation's 1,300 schools of nursing in 1947 has been set for the Student Nurse Recruitment Program being conducted by the American Hospital Association and the Advertising Council, Inc. The program has been endorsed by the American Medical Association, United States Public Health Service, American Red Cross, national nursing organization, health agencies and civic organizations.

Objective of the nation-wide campaign is to stimulate interest in nursing among young women about to choose a career, and to inform prospective student

nurses of the advantages and opportunities offered by nursing as a profession.

Although there now are at least as many graduate nurses as there were before the war, the present shortage of nurses is handicapping planned expansion of existing hospital and health facilities in all parts of the country. The current shortage is caused by a great increase in demand for hospital and nursing care. Factors in the increased demand for hospital care and the apparent shortage of nurses include the growth of membership in Blue Cross and other prepaid hospitalization plans which facilitate necessary use of hospital service; shorter hours now worked by nurses in hospitals which has meant less work done by an individual nurse; increased interest in health which has brought new demands for nurses in non-hospital fields, and the continuing need for nurses in the armed forces and in veterans' hospitals.

An alarming drop in enrollment in schools of nursing in 1946 brought enrollments down below pre-war level after the peak years of the Cadet Nurse Recruitment campaign. This drop in enrollment means the current shortage of graduate nurses will be worse in years to come unless something is done to encourage entrance of young women into the nursing profession.

With the full cooperation of the Advertising Council, Inc., representing the advertising industry of the nation, the American Hospital Association's Student Nurse Recruitment Program includes radio programs, newspaper publicity, advertising in newspapers, magazines and on the radio, car cards and posters distributed throughout the country. Through all of these media, the fullest possible information on nursing as a career will be brought to young women in all parts of the nation.

The campaign stresses positive aspects of nursing—the hundreds of interesting jobs open in hospitals and in non-hospital fields, the higher pay and shorter hours now generally prevailing for nurses, the high respect in which the profession is held by members of the community, the excellent education offered at low cost, and the value of nurse training as preparation for marriage and family and community life.

Hospitals, principal consumers of nursing service, offer dozens of opportunities for the graduate nurse—supervisory work, teaching, research, specialization in one of many branches of nursing, hospital administration, etc. In most hospitals, shorter hours and high pay now are the rule. The number and quality of jobs for nurses in hospitals promise to grow for years to come with the planned expansion of hospital facilities.

In addition to opportunities open in hospitals, well-paid jobs in public health nursing, industrial nursing, schools and institutions, doctors' offices, government agencies, Army, Navy, Veterans' Administration hospitals, medical social work and literally dozens of other fields are open to the well-trained graduate nurse. It is said that a well-trained nurse need never be without a good job.

Advantages of nursing education also are stressed in the campaign. Many schools of nursing are affiliated with colleges or universities so that a student nurse may look forward to receiving her bachelor's degree at the same time she earns her R.N. High standards of education offered at schools of nursing, free room and board, low tuition, pleasant living conditions, recreational facilities, off-duty activities, vacations, health benefits offered student nurses and other advantages will be brought to the attention of young women about to choose a career.

In conducting the national and local student nurse recruitment campaigns, the committees in charge are relying heavily on the assistance of various groups outside of hospitals and schools of nursing interested in helping to combat the shortage of graduate nurses. The role of such groups in promoting interest in the campaign and in nursing is invaluable.

Ways in which the Woman's Auxiliary to the American Medical Association can help the Student Nurse Recruitment Program are almost limitless. In one community, members of the local auxiliary compiled a list of addresses of all junior and senior high school girls in the town's high schools to be used as a mailing list for a brochure on the school of nursing. Later, the auxiliary helped to give teas for groups of high school students at the school of nursing and some members acted as guides to show interested girls through the hospital and school.

Scholarship funds for student nurses have been undertaken as projects by some auxiliaries with excellent results in increased interest in nursing among prospective students, otherwise qualified, who felt they could not afford the cost of tuition and other fees. Other groups have helped schools of nursing provide better recreational facilities for students, redecorate rooms in nurses' dormitories, or performed some other special project.

Members of the Auxiliary, working with the local student nurse recruitment committee, might operate an information booth at the local high schools to provide personal consultation for girls interested in finding out more about nursing schools or nursing opportunities. Other committee activities might include assistance in securing sponsors for newspaper advertisements, presenting radio programs about opportunities in nursing and arranging for feature newspaper stories.

Medical society auxiliaries interested in assisting the 1947 Student Nurse Recruitment Program are urged to get in touch with nursing schools and hospitals in their areas for further information about local programs and campaigns.

—*The Bulletin*, May, 1947.

IOWA'S RURAL ENROLLMENT PROGRAM

Local (county) health improvement associations have been incorporated for the purpose of improving personal and public health and establishing community groups whose membership would be eligible for Iowa Blue Cross Hospital Service and Iowa

(Continued on page 475)

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. WALTER L. BIERRING, Des Moines, Chairman

DR. HENRY G. LANGWORTHY, Dubuque, *Secretary*

DR. CHARLES L. JONES, Gilmore City

DR. CLYDE A. HENRY, Farson

DR. LESTER C. KERN, Waverly

EWEN M. MACEWEN, M. D.

1885-1947

AN APPRECIATION

A legion of friends in Iowa and throughout the United States and Canada were saddened by the death of Dr. Ewen M. MacEwen, Dean of the State University of Iowa College of Medicine on Sept. 2, 1947, at the University Hospital, Iowa City.

He became ill in his office on May 20 with acute coronary thrombosis. His recovery appeared to be progressing satisfactorily, and he had resumed some of his duties when a second severe occlusion occurred on the morning of September 2 which led to his death in the afternoon.

This is the second time in the history of Iowa University Medical School that death came to the dean while in office, the other being that of Dean William D. Middleton who died March 5, 1902.

Dr. MacEwen was born of Scottish parentage Sept. 16, 1885, in Greenwich, Prince Edward Island, Canada, and came with his parents to the United States in 1899. His father was a Presbyterian minister and first came to Omaha, Neb., to complete a theological course, after which he moved and took the pastorate of the Presbyterian Church in Battle Creek, Iowa. Here the son spent his youth and grew to young manhood. Dr. MacEwen was graduated from the Battle

Creek High School in 1902, attended Buena Vista College for one year, Parsons College in Fairfield one year, and completed his course at Coe College, Cedar Rapids, for the Bachelor of Science degree in 1907. He taught one year at Coe College Acad-

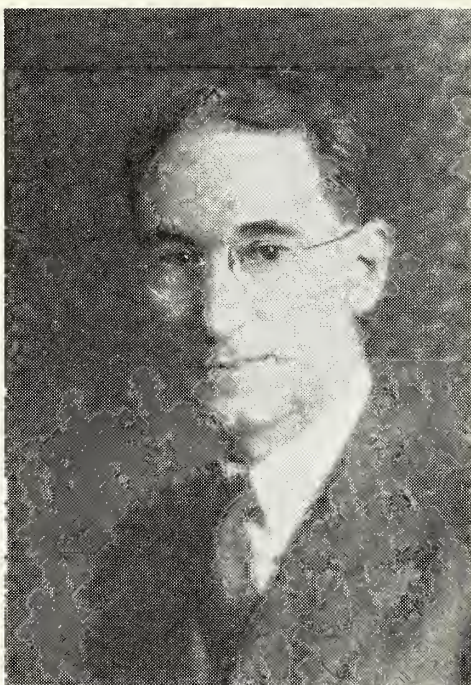
emy from 1906 to 1907, and the following year in the Hampton, Iowa, High School.

In 1908 he entered the College of Medicine of the State University of Iowa, Iowa City, from which he was graduated with the degree of Doctor of Medicine in 1912. Three years later he was granted the degree of Master of Science by the University.

During his medical course Dr. MacEwen attracted the attention of Professor Prentiss, one of the great and inspiring teachers of anatomy of his period, and soon after his graduation he became a member of the teaching staff of this department. He served as assistant in anatomy until 1914 when he became an instructor and one year later was appointed

assistant professor. He was appointed associate professor in 1918, professor in 1920, and served as head of the department of anatomy from 1931 to 1940.

He was elected dean of the College of Medicine in 1935, and soon rose to leadership in the broader



Ewen M. MacEwen, M.D.

field of medical education and administration. This was recognized in his election to the presidency of the Association of American Medical Colleges in 1943. His presidential address at the Pittsburgh meeting showed a remarkable grasp of the modern trends of medical education and the problems concerned therewith. After his term as president he served as chairman of the Executive Council of that Association.

He was deeply interested in medical society organizations and a faithful attendant at county, district and state medical meetings. As dean he devoted his constant endeavors towards harmonizing the interests and purposes of the medical school with those of the practicing physicians of the state. He was always greatly interested in maintaining the high standards of the medical college number issued annually in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

Possibly due to his Scottish ancestry he was noted for a firmness of purpose and opinion, yet this was coupled with a spirit of honesty and sincerity that ever prompted a ready acknowledgment of error when convinced of the same. It was these traits of character that endeared him to friends and colleagues everywhere.

As Chairman of the Deans' Committee of the Veterans Hospital at Des Moines, he had a prominent part in organizing the consulting, attending and residency staffs of this hospital in accordance with the new plan of the Veterans Administration.

Dr. MacEwen was a member of the American Medical Association, the American Association of Anatomists, the American Association of Physical Anthropologists, and the American Association for the Advancement of Science. He was also a member of Alpha Omega Alpha Honor Medical and Sigma Xi Honor Science societies, and of Nu Sigma Nu medical fraternity.

He was an active member of the First Presbyterian Church, Iowa City, where final services were held on September 5. Dr. MacEwen was president of the First Federal Savings and Loan Association and vice president and member of the board of directors of the Iowa State Bank and Trust Company, both of Iowa City.

His hobbies were hunting, fishing and stamp collecting. He specialized in United States stamp issues and was particularly interested in the doctor stamps first issued at the Centennial Session of the American Medical Association in June at Atlantic City, N. J.

He is survived by his widow, Hazel Martha Hayward MacEwen, and by two daughters, Mrs. Frank L. Bauer of Washington, D. C., and Mrs. Glenn D. Devine, Jr., Iowa City.

In the death of Dr. MacEwen, Iowa medicine has lost a great leader, medical education an inspiring teacher and administrator, and medical science a worthy disciple and faithful worker. "Mac" will be missed from our councils, and the memory of his fellowship and rugged personality will linger with us throughout the years.

Walter L. Bierring, M.D.

ENROLLMENT PROGRAM

(Continued from page 473)

Medical Service. Sixty-nine counties have been organized—ten in 1944, twenty-seven in 1945, twenty-nine in 1946, and three to June 1, 1947. Iowa is 55 per cent rural. Twenty-five per cent of the 400,000 subscribers to Blue Cross are from rural areas. One in every five eligible persons in the territory covered by the plan is enrolled. Medical service plan contracts have recently been offered rural subscribers in seven counties. Of the approximately 15,000 persons enrolled in Iowa Medical Service 3,468 or about 25 per cent are from rural areas.

Iowa Medical Service

Iowa Medical Service and the Iowa Blue Cross hospital plan have made coverage under both programs available to office employees and domestic employees of doctors. The original enrollment period was extended to permit all these employees to take advantage of the combined facilities.—"News Letter," July 9, 1947, Council on Medical Service, A.M.A.

HEALTH MOVING PICTURE BEING SHOWN

A moving picture, "Be Your Age," prepared by the Metropolitan Life Insurance Company and the American Heart Association, will be shown in theaters throughout the state during October and November. Sponsored by the State Department of Health, authorities deem it worthy of the support of members of the medical profession.

INSTRUCTIONAL COURSE IN ALLERGY

The American College of Allergists has announced that its annual fall graduate instructional course in allergy will be given in Cincinnati, Ohio, November 3-8, inclusive, under the auspices of the Medical College of the University of Cincinnati.

The program this year is the best ever offered by the College. Forty-six formal lectures are listed and also a special allergy clinic of case presentations. An added feature this year will be three informal discussion groups led by various members of the faculty.

Programs and complete information can be obtained by writing to the College Secretary, Dr. Fred W. Wittich, 423 La Salle Medical Building, Minneapolis 2, Minnesota.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- DISEASES OF THE CHEST WITH EMPHASIS ON X-RAY DIAGNOSIS**—By Eli H. Rubin, M.D., F.A.C.P., F.C.C.P., Attending Physician, Division of Pulmonary Diseases, Montefiore Hospital and Country Sanatorium, New York; Visiting Physician in Tuberculosis and Physician-in-charge, Chest Clinic, Morrisania City Hospital, New York. The Principles of Surgical Treatment—by MORRIS RUBIN, B.A., M.D., Assistant Visiting Surgeon, Triboro Hospital and Morrisania City Hospital, New York; Formerly Chief, Thoracic Surgical Section, Sixty-Ninth General Hospital, Assam, India. W. B. Saunders Company, Philadelphia, 1947. Price, \$12.
- GYNECOLOGY with a Section on FEMALE UROLOGY**—By Lawrence R. Wharton, Ph.D., M.D., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Assistant Attending Gynecologist, The Johns Hopkins Hospital; Consultant in Gynecology, The Union Memorial Hospital, Hospital for the Women of Maryland, Sinai Hospital and Church Home and Infirmary. Second edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.
- A HANDBOOK OF OCULAR THERAPEUTICS**—By the late Sanford R. Gifford, M.D., F.A.C.S., Professor of Ophthalmology, Northwestern University Medical School, Chicago; revised by DERRICK VAIL, M.D., D.O. (Oxon.), F.A.C.S., Professor of Ophthalmology, Northwestern University Medical School, Chicago, Ill. Fourth edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$5.
- INFANT NUTRITION: A Textbook of Infant Feeding for Students and Practitioners of Medicine**—By P. C. Jeans, A.B., M.D., Professor of Pediatrics, College of Medicine, State University of Iowa, Iowa City; and WILLIAMS McKIM MARRIOTT, B.S., M.D., Late Professor of Pediatrics, Washington University School of Medicine; Physician in Chief, St. Louis Children's Hospital, St. Louis. Fourth edition. The C. V. Mosby Company, St. Louis, 1947. Price, \$6.50.
- INTERNAL MEDICINE IN GENERAL PRACTICE**—By Robert Pratt McCombs, B.S., M.D., F.A.C.P., Assistant Professor of Medicine and Director of Postgraduate Teaching, Tufts College Medical School; Senior Attending Physician, The Joseph H. Pratt Diagnostic Hospital; Diplomate of the American Board of Internal Medicine. Second edition, illustrated. W. B. Saunders Company, Philadelphia and London, 1947. Price, \$8.
- A MANUAL OF THE COMMON CONTAGIOUS DISEASES**—By Philip Meen Stimson, A.B., M.D., Associate Professor of Clinical Pediatrics, Cornell University Medical College; Visiting Physician, Willard Parker Hospital; Director, Poliomyelitis Service, The Knickerbocker Hospital; Medical Director, The Floating Hospital of St. John's Guild; Associate Attending Pediatrician, The New York Hospital; Consulting Pediatrician, The Meadowbrook, Bergen Pines, and Norwegian Lutheran Hospitals. Fourth edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$4.
- A MANUAL OF FRACTURES AND DISLOCATIONS**—By Barbara Bartlett Stimson, A. B., M.D., Med. Sc.D., F.A.C.S.; Assistant Professor of Clinical Orthopedic Surgery, College of Physicians and Surgeons, Columbia University, New York City; Associate Attending Surgeon, Presbyterian Hospital and Vanderbilt Clinic, New York City. Second edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$3.25.
- OFFICE IMMUNOLOGY INCLUDING ALLERGY, A Guide for the General Practitioner**—Edited by Marion B. Sulzberger, Professor of Clinical Dermatology and Syphilology and Director New York Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital; and RUDOLF L. BAER, M.D., Instructor in Dermatology and Syphilology, New York Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital. The Year Book Publishers, Inc., Chicago, 1947. Price, \$6.50.
- OFFICE TREATMENT OF THE EYE**—By Elias Selinger, M.D., Attending Ophthalmologist, Mount Sinai, Cook County and Michael Reese Hospitals. The Year Book Publishers, Inc., Chicago. Price, \$7.75.
- PRACTICAL X-RAY TREATMENT**—By Arthur W. Erskine, M.D. Third edition, revised and enlarged. The Bruce Publishing Company, St. Paul and Minneapolis, 1947. Price, \$4.50.
- REHABILITATION THROUGH BETTER NUTRITION**—University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Alabama; by TOM D. SIVES, M.D., from the Department of Internal Medicine, University of Cincinnati College of Medicine. W. B. Saunders Company, Philadelphia, 1947. Price, \$4.
- A TEXTBOOK OF PATHOLOGY**—By E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis, Minn.; Contributors—B. J. Clawson, M.D., Professor of Pathology in the University of Minnesota, and J. S. McCartney, M.D., Associate Professor of Pathology in the University of Minnesota. Sixth edition. Lea & Febiger, Philadelphia, 1947. Price, \$10.
- THE YEARS AFTER FIFTY**—By Wingate M. Johnson, M.D., Professor of Clinical Medicine and Chief of Private Diagnostic Clinic, Bowman Gray School of Medicine of Wake Forest College; with a Foreword by Morris Fishbein, M.D., Editor, Journal of the American Medical Association. Whittlesey House, McGraw-Hill Book Company, Inc., New York. Price, \$2.

BOOK REVIEWS

OBSTETRICAL PRACTICE

By Alfred C. Beck, M.D., Professor of Obstetrics and Gynecology, Long Island College of Medicine; Obstetrician and Gynecologist-in-Chief, Long Island College Hospital, Brooklyn. Fourth edition. The Williams and Wilkins Company, Baltimore, 1947. Price, \$7.

The new fourth edition of *Obstetrical Practice* by Alfred C. Beck is a comprehensive standard work on obstetrics. The author presents the subject in a simple, clear, concise manner that makes for quick understanding by student and practitioner. The book is profusely illustrated, particularly the chapters on posterior-positions of the occiput and the various types of presentation.

The early chapters contain embryology and histology pertinent to the subject being dealt with, and in the following chapters cellular and tissue changes

constituting pathology are compared with the normal tissue structure.

Complications encountered during the course of pregnancy and at the time of labor are discussed. Pathology, diagnosis and treatment are taken up in an orderly manner. In the chapter dealing with toxemias of pregnancy, the author differentiates between hyperemesis gravidarum and toxic pernicious vomiting. He states that the latter condition can only end in death unless a therapeutic abortion is performed. He also is of the opinion that all vomiting is primarily neurotic in origin but, of course, many authorities are at variance with this view.

The chapter on forceps is well handled as to indications, applications and types of instruments best suited for the existing condition. This chapter is exceptionally well illustrated. The varied types of forceps now in use are pictured and their mechanism described.

Analgesia, amnesia, and anesthesia are discussed and all of the drugs used to produce these conditions are enumerated, the advantages and disadvantages of each being given. The author's opinion, after careful consideration of all of the methods advocated for relief of pain during childbirth, is that local anesthesia combined with demerol and scopolamine is the simplest, safest and most satisfactory method for the average woman in the hands of the average practitioner. An excellent point made is to again call attention to the dangers of explosion when using ethylene and cyclopropane and mention of the safeguards to be set up in each delivery room for the prevention of such tragedy. Another important point often overlooked is the occurrence of pituitary shock which is greatly accentuated during or after cyclopropane anesthesia due to incompatibility.

Obstetrical practice covering the entire field of obstetrics is necessarily a large volume and should offer practical help to any physician doing obstetrics.

H.A.S.

SYNOPSIS OF ALLERGY

By Harry L. Alexander, A.B., M.D., Professor of Clinical Medicine, Washington University School of Medicine, St. Louis; Editor of the *Journal of Allergy*. Second edition. The C. V. Mosby Company, St. Louis, 1947. Price, \$3.50.

This little volume of 249 pages, in its second edition, is a clearly expressed, compact, practical guide to the field of allergy. It is a synopsis of allergy as understood today. There are no wasted words. Controversial points are indicated; they are not elaborated upon to confuse the text. Thus, a concise perspective of the facts known is given.

The chapters on atopy, bronchial asthma, hay fever, and allergic dermatoses are treated more fully than the others, and very practical points are made about the treatment of these conditions. The author brings up to date the evaluation of skin tests as a guide to the practical management of cases. He indicates that in chronic urticaria extrinsic factors are rarely at fault.

Chapters on atopic rhinitis, gastro-intestinal allergy, physical allergy, drug allergy, serum allergy, bacterial allergy, and vascular allergy are treated briefly. The relationship between periarteritis nodosa and other forms of allergy is discussed, indicating this manifestation as a common expression of various forms of allergy, and pointing to the fundamental role of the vasculature in allergy.

In addition, there is an appendix which includes pertinent information on the preparation of atopens; on group tests; a list of household materials and the possible allergens they contain; a discussion of diagnostic methods including the technic of skin tests, ophthalmic and mucosal tests; recipes for elimination diets; and a chart of ragweed pollen distribution.

This is an excellent little book for obtaining perspective by student, general practitioner, and the specialist in other fields. It should be read before embarking on more weighty texts on the subject.

S.G.

OFFICE IMMUNOLOGY INCLUDING ALLERGY

A Guide for the General Practitioner—
Edited by MARION B. SULZBERGER, Professor of Clinical Dermatology and Syphilology and Director, New York Skin and Cancer Unit, New York Postgraduate Medical School and Hospital; and RUDOLF L. BAER, M.D., Instructor in Dermatology and Syphilology, New York Skin and Cancer Unit, New York Postgraduate Medical School and Hospital. The Year Book Publishers, Inc., Chicago, 1947. Price, \$6.50.

While this work contains no new information, its scope and objectives are entirely different. The authors have gathered together in a concise form the various diagnostic, prophylactic and therapeutic measures pertaining to immunology which heretofore have been scattered about among many texts.

The authors describe only those procedures which can be accomplished in the office by the practicing physician without elaborate equipment. Among the diseases which are given the fullest presentation are the allergies. The chapters devoted to this subject contain detailed description of diagnostic and immunologic procedures. Other chapters deal with immunology of infections and dermatologic immunology in briefer style, more for reference than for study.

The different sections are contributed by authors who are skilled in dermatology, allergy and pediatrics.

All in all this should prove one of the most useful texts yet compiled for the practitioner.

J.W.Y.

A HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

By Morris Fishbein, M.D., with the Biographies of the Presidents of the Association by Walter L. Bierring, M.D., and with Histories of the Publications, Councils, Bureaus and other Official Bodies. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.

This volume is certainly recommended for the private library of each member of the American Medical Association. The history was prepared by Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*. Highlighting the edition is the biographical section prepared by Dr. Walter L. Bierring. Not only is this section authentic but it is delightfully written and will prove of interest to every reader.

E. M. G.

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk County

The regular meeting of the Black Hawk County Medical Society was held in the Russell-Lamson Hotel September 16 at 6:30 p. m. Dr. R. B. Newman of the Department of Orthopedics, State University of Iowa College of Medicine, spoke on "Common Orthopedic Problems Seen by the General Practitioner."

Butler County

The Butler County Medical Society met in Clarks-ville August 11. Dinner was served in a shelter house at the park. Guests of the group were Dr. and Mrs. Emmet Ayres of Charles City.

Linn County

The next meeting of the Linn County Medical Society will be held October 9 at Hotel Montrose, Cedar Rapids. Guest speaker will be Dr. Samuel Z. Levine of New York Hospital, New York, who will talk on "Feeding of the Premature Infant."

Louisa County

The regular meeting of the Louisa County Medical Society was held in Wapello September 11. Dr. J. H. Chittum was chosen representative to the meeting of the Committee on Medical Service and Public Relations. It was moved and seconded that Louisa County Medical Society recommend Dr. J. H. Chittum to the House of Delegates for life membership in the State Society. Following a round-table discussion, the meeting was adjourned.

Scott County

The Scott County Medical Society met September 2 at the Lend-A-Hand Club in Davenport. Following a six o'clock dinner, Dr. Harry Weinberg presented a talk on the subject, "Recent Advances in Internal Medicine."

Woodbury County

The Woodbury County Medical Society met September 11 in the ballroom of the Mayfair Hotel, Sioux City, for dinner and a scientific program. Dr. Frank B. Leitz of Kansas City, Mo., spoke on "Coronary Heart Disease."

PERSONALS

Dr. Fred A. Bowman of Leon spoke to the Rotary Club of that city at noon luncheon August 18. His subject was "Diseases of Men Past Forty."

Dr. J. H. Butts, who practiced medicine in Waterloo from 1921 until he entered the Navy Medical

Corps in World War II, is planning to re-enter practice there about October 1. Dr. Butts, whose offices will be located in the Black Building, plans to limit his practice to internal medicine.

Dr. Mildred Doster, formerly assistant director of the school health department in Denver, recently accepted the appointment of director of the Washington County health unit.

Dr. Lyle F. Frink recently opened offices for the practice of medicine in Spencer. A graduate of the State University of Iowa College of Medicine, Dr. Frink served three years in the South Pacific as a combat medical officer.

Dr. James B. Hutchison, formerly of New York, has accepted a position in the Clarinda State Hospital where he will specialize in caring for diseases of the chest. A graduate of Queens College, Ontario, Canada, he obtained training in care of mentally ill patients in New York state.

Dr. Helen Johnston of Des Moines, who recently returned from a trip abroad, spoke on "Conditions in Europe" before the Business and Professional Women's Club of that city September 8. Dr. Johnston was also a delegate to the Triennial Conference of the International Council of Women held in Philadelphia recently.

Dr. E. L. Kingsbury has resigned as deputy county coroner for Lee County to spend a year at the University of Southern California where he will take up postgraduate work in cardiology. A graduate of the State University of Iowa College of Medicine with the class of 1932, Dr. Kingsbury had practiced in Keokuk since 1938. He is succeeded by his brother, Dr. Charles Kingsbury.

Dr. Horace M. Korn of Dubuque helped conduct a three-day postgraduate medical program for the Wisconsin State Medical Society recently. For the program, which is an annual event, Dr. Korn helped instruct in internal medicine.

Dr. William H. Megordon spoke to the Kiwanis Club of Mount Pleasant August 11 on "Mental Diseases." He discussed some of the kinds of mental diseases, what can be done to avert becoming mentally ill, and what can be done in the way of treatment.

Dr. Harold W. Morgan of Mason City spoke at a dinner meeting of persons interested in the cancer drive at Associated Church, Hawarden, August 28.

He stressed the scope of the fight against cancer, the importance of the time element in treating the disease, and its prevalence as a cause of death.

Dr. F. L. Poepsel, formerly of West Point, has become associated with Drs. F. H. and B. J. Dierkers of Fort Madison. He has served the West Point community for nineteen years.

Dr. A. R. Powell, formerly of Vinton, opened offices for the practice of medicine in Elkader August 1. Dr. Powell is a native of Toledo, Ohio, and received his medical degree from Loyola University School of Medicine, Chicago, in 1942.

Dr. K. H. Prescott of Sioux City has entered into partnership with Dr. Russell R. Hansen of Storm Lake for the general practice of medicine. Dr. Prescott received his medical degree at the University of Nebraska College of Medicine, Omaha, in 1934.

Dr. James W. Rouse, formerly of Omaha, is now located in Sioux City where he is associated with Dr. John S. Tracy in the practice of medicine. A graduate of Creighton University in 1943, Dr. Rouse served as lieutenant in the Navy Medical Corps, and following his release from active duty spent a year at St. Joseph's Hospital, Omaha.

Dr. Robert D. Rowley, formerly of Burlington, is now located in Bellevue. A graduate of the State University of Iowa College of Medicine and a veteran of World War II, Dr. Rowley is associated with Dr. G. N. Wilkinson.

Dr. David F. Shaw, after an absence of several years which were spent in the service with the Army Air Forces, has returned to Britt where he resumed his practice. He is located in the Dr. C. O. Brewster office building.

Dr. Wayland H. Stephenson of Newton recently entered a postgraduate course at Hines Hospital, Chicago. Dr. L. H. Koelling of Lawrence, Kan., has taken over Dr. Stephenson's practice.

Dr. Millard A. Troxell opened offices for the general practice of medicine and surgery in Nora Springs September 13. A graduate of the State University of Iowa College of Medicine, Dr. Troxell entered the Army Medical Corps in July, 1945. Since his discharge in June, 1947, he has practiced in Mallard.

Dr. James T. Worrell, formerly of Quincy, Ill., recently located in Keosauqua. He is occupying office space in the Masonic Building previously used by Dr. James A. Craig.

Dr. Andrew H. Woods of Iowa City addressed the Lions Club at that group's regular noon luncheon meeting August 27. His subject was "Insanity in the Law Courts."

MARRIAGE ANNOUNCEMENTS

Hall-Bowers

Miss Sheila Alberta Hall, daughter of Mrs. A. G. E. Hall of London, England, and Dr. Clifford V. Bowers of Sioux City, son of Dr. and Mrs. B. A. Bowers of LeMars, Iowa, were married in Holy Trinity Church, London, England, August 12. Following a wedding trip to Switzerland, the couple returned to Sioux City where they will make their home.

Newburger-Greenblatt

Miss Joan Newburger, daughter of Mr. and Mrs. Berthold J. Newburger of Des Moines, became the bride of Dr. Gerald Greenblatt, son of Mr. and Mrs. Sam Greenblatt, in the home of her parents September 6. Mrs. Greenblatt was graduated from Smith College, Northampton, Mass., and Dr. Greenblatt received his degree from the College of Medicine, State University of Iowa. They will reside in Cedar Rapids where Dr. Greenblatt practices.

DEATH NOTICES

Auner, Jay Frank, aged 74, of Des Moines, died August 17 in Iowa Methodist Hospital following a two weeks' illness. Dr. Auner, a graduate of the University of Illinois College of Medicine, Chicago, with the class of 1897, practiced two years at Osage and seventeen years at Waverly before coming to Des Moines. He was a life member of the Polk County and Iowa State Medical Societies.

Chilson, Alvin Harvey, aged 62, of Plymouth, died in Cherokee August 27 after an illness of several years' duration. He was graduated from the State University of Iowa College of Medicine, Iowa City, in 1913, and practiced in Mason City, Hampton and Grafton before coming to Plymouth twenty-one years ago. Dr. Chilson, who retired in February, 1946, was a member of the Cerro Gordo County and Iowa State Medical Societies.

Dunkelberg, Elmer Irl, of Waterloo, aged 58, died August 25 at his home following a heart attack. Dr. Dunkelberg, who was graduated from the Jefferson Medical College of Philadelphia in 1910, had practiced in Waterloo since 1911. He was a member of the Black Hawk County and Iowa State Medical Societies.

Harper, Edna Kathryn Sexsmith, of Greenfield, aged 63, died at her home August 19. Upon graduation from the University of Illinois College of Medicine, Chicago, in 1918, she began practicing in Greenfield. She was a member of the Adair County and Iowa State Medical Societies.

Hawley, Olin Barrett, of Corning, aged 65, died at his home August 22 of arteriosclerotic heart disease. He was graduated from Ensworth Medical College, St. Joseph, Mo., in 1906, served his internship at Ainsworth Hospital, and located in Corning where he had practiced forty-one years. He was a

member and past president of the Adams County Medical Society and a member of the Iowa State Medical Society.

Huston, Samuel W., of Mount Pleasant, aged 72, died September 6 at Memorial Hospital in that city where he had been confined since suffering a stroke July 4. A graduate of the State University of Iowa College of Medicine, Iowa City, Dr. Huston had practiced in Crawfordsville before coming to Mount Pleasant in 1925. He was a member of the Henry County and Iowa State Medical Societies.

MacEwen, Ewen Murchinson, aged 61, of Iowa City, died September 2 at University Hospitals of a heart ailment. Dr. MacEwen was graduated from the State University of Iowa College of Medicine with the class of 1912, became a member of the faculty of that institution the same year, and had served as its dean since 1940. Dr. MacEwen was a member of the Johnson County and Iowa State Medical Societies.

Mauer, George Alfred, aged 62, of Le Mars, died August 29 at his home following a brief illness. Dr. Mauer was graduated from the State University of Iowa College of Medicine in 1912. He practiced in Meriden fourteen years before locating in Le Mars in 1926. At the time of his death Dr. Mauer was a member of the Plymouth County and Iowa State Medical Societies.

Mereness, Herbert Dayton, aged 71, of Dolliver, died September 10 at Holy Family Hospital, Estherville, of a heart ailment. A graduate of the State University of Iowa College of Medicine with the class of 1898, Dr. Mereness practiced in Sac City and Westfield before coming to Dolliver forty-one years ago. He was a member of the Emmet County and Iowa State Medical Societies.

Ott, Martin Daniel, aged 56, of Davenport, died of a heart ailment August 20 at his home. Dr. Ott was graduated from the University of Minnesota Medical School, Minneapolis, in 1920, and had practiced pediatrics in Davenport since 1923. He was a member of the Scott County and Iowa State Medical Societies.

HOSPITAL SERVICE, INC., OF IOWA MOVES

It is with a feeling of pride and gratification that we write this little story of the history of Hospital Service, Inc., of Iowa. Several of us have played a small part in the progress of the Plan and have watched its development from what might be termed a "small acorn" into a "great oak" under whose protection many sick people have found health and peace of mind.

During the first months of the Plan's existence,

beginning late in 1939, there was only one department—the Service department. In it all of the work of all departments as they developed was done by one person; all correspondence including dictation by Mr. Lattner, executive director, and Mr. Lichty, enrollment manager; the bookkeeping (that was meager at first); cashiering (the money coming in was meager too); the hospital cases (James D. Brien had case number 1); and even the punching of the tab cards. Our first equipment consisted of a shabby desk and chair for Mr. Lattner. Mr. Lichty had a rough "kitchen" table for a desk and a shabby chair. Our Service department had a scarred and splintered desk, a hard wooden, arm chair without rollers. All of this furniture had been borrowed from the building. For a typewriter we used an ancient portable Underwood owned by Mr. Lichty. For files we used the desk drawers and for a supply cabinet, the floor of Mr. Lattner's office.

First Additions

Early in 1940 we secured an IBM punching machine and Bob Miller joined our staff and took over the operation of the card punching and later the hospital cases. Late in the same year, Julia Mingus came along and took over the dictation. By that time we had acquired an ediphone. During all of this time we had two small office rooms on the sixth floor of the Insurance Exchange building. Later we moved to larger quarters on the fourth floor.

Our next move was to the south side of the second floor where we had more room, and in January 1944 we moved to 202 where we expanded so greatly that three departments had to be moved to the first floor on March 1, 1947.

We had good times and bad times in those first years. We did make progress—slowly but surely—and the first thing we knew we were suffering from "growing pains," chiefly because Blue Cross was a new business and we as well as the other Blue Cross Plans had to find the best way to do things by the trial and error method.

Our New Home

And now we come to another milestone in the progress of H.S.I.I. We are growing bigger and better right along. We are proud that we have attained such stature as to need the additional space that our new home in the Liberty building will give us—yet we are humble as we acknowledge that added advantages also mean greater responsibilities. Blue Cross is a SERVICE Plan and each one of us by doing a particular job to the best of his or her ability, can serve our community and our fellow men by helping the other fellow to a healthier and happier life and in turn bringing greater satisfaction and growth to ourselves.

In the Liberty building we are occupying the entire seventh floor and a part of the third floor. The executive offices, hospital, service, group and direct bookkeeping, files and tabulating departments will be housed on the seventh floor, while enrollment, public relations, multilith, stock and cashiers and Iowa Medical Service will be on the third floor.

Freda M. Sternburg.

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EXPERIENCE WITH ANTICOAGULANTS IN THE MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION*

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The following is a report on the incidence of thrombo-embolic complications in a series of 50 cases of acute myocardial infarction in which the patients have recently been treated with the anticoagulants, heparin and dicumarol, at the Mayo Clinic.

The complications which accompany acute coronary thrombosis with myocardial infarction frequently are the immediate effects of further arterial thrombosis, formation of mural thrombi and embolic phenomena. In many instances these complications are the cause of death. It would seem logical to assume that utilization of the now available anticoagulant drugs would aid materially in reducing the frequency of these complications. In 1945, Nay and Barnes¹ reported on the incidence of thrombo-embolic complications in a consecutive series of 100 cases of acute myocardial infarction in which the patients were observed at the Mayo Clinic. Thrombo-embolic complications of one type or another occurred in 37 per cent of these patients during their convalescent period in the hospital. None of them received anticoagulants. This report of Nay and Barnes will serve as a basis of comparison relative to the effect obtained from the employment of anticoagulant drugs in the treatment of acute myocardial infarction.

The use of dicumarol and heparin in the management of acute coronary thrombosis with myocardial infarction is based on four principal objectives: (1) the prevention of an extension of the thrombus, either proximally or distally to the original site of the arterial closure; (2) the pre-

vention of the formation of intracardiac mural thrombi; (3) the prevention of thrombophlebitis from which pulmonary embolism may arise; and (4) the prevention of thrombosis in peripheral arteries already considerably affected by arteriosclerosis.

There have appeared in the medical literature in this country three reports (namely, those of Nichol and Page;² Peters, Guyther and Brambel;³ and Irving Wright⁴) concerning the effect of dicumarol in cases of acute coronary thrombosis. These reports have all been favorable and have indicated a lowering of the mortality rate as well as a marked reduction in the frequency of thrombo-embolic complications.

The patients represented in this report were persons who were hospitalized in one of the Rochester hospitals within a few days after the onset of clinically unmistakable acute myocardial infarction. In addition to the usual therapeutic program, these patients received dicumarol or heparin in combination with dicumarol as soon as the clinical diagnosis of acute myocardial infarction had been established. Positive electrocardiographic changes indicative of acute myocardial infarction were noted in all cases. No attempt was made to select only certain patients because of the severity or the mildness of the systemic reaction to the infarction. Anticoagulants were omitted in the cases in which there was a definite contra-indication to their use, such as renal insufficiency, hepatic disease or the presence of a suspected ulcer or bleeding lesion. Two patients who had received dicumarol but who died within a few hours after admission to the hospital before there was any lowering of the prothrombin level are not included in this series.

Of the 50 patients included in this study, 40 were men and 10 were women. The average age of these patients was 59 years; the youngest was 39 years old and the oldest was 82 years of age. In table 1 is shown the distribution of the patients according to age by decades and according to sex.

*Abstract of paper entitled "The Use of Anticoagulants in the Management of Acute Myocardial Infarction," presented before the annual meeting of the Iowa State Medical Society, April 16 to 18, 1947, by R. L. Parker and N. W. Barker, and published in the Proceedings of the Staff Meetings of the Mayo Clinic, 22: 185-192 (May 14) 1947.

TABLE 1
Myocardial Infarction: Distribution According to Sex and Age,
50 Patients Treated With Anticoagulants

Sex	
Male	40
Female	10
Age, years	
Youngest	39
Oldest	82
Average	59
Age, distribution, years	
39-49	7
50-59	20
60-69	16
70-79	4
80-89	3

Twenty-nine of the 50 patients (58 per cent) gave a history of angina pectoris prior to the onset of the acute myocardial infarction for which they were hospitalized. In 11 cases (22 per cent) there had been a previous episode of acute myocardial infarction, but in no instance had there been more than 1 clinically recognizable myocardial infarction prior to the one for which the patients concerned were treated in this series. Twenty patients (40 per cent) either had hypertension at the time of their admission to the hospital or were known to have had hypertensive disease prior to the onset of the present myocardial infarction. Two patients had suffered from congestive heart failure prior to the development of acute myocardial infarction.

Anticoagulant Therapy

The administration of dicumarol and heparin to this group of patients and proper control of dosage followed the method recommended by Barker and his colleagues⁵⁻⁸ in the management of acute peripheral arterial occlusion and acute pulmonary embolism. An attempt was made in all cases to obtain an anticoagulant effect in the blood as soon as possible after the diagnosis had been established. In 10 cases, heparin was used in combination with dicumarol; in 40 cases, dicumarol was used alone. Tests of the prothrombin time were made daily on each patient, and an effort was made to keep the prothrombin time between those limits which correspond to the prothrombin time for 10 per cent and 30 per cent prothrombin. The average period of hospitalization for the patients who recovered was twenty-nine days, and the average period in which these patients were maintained on effective anticoagulant therapy (prothrombin less than 30 per cent of normal) was twenty-four days.

When heparin is employed, an immediate anticoagulant effect is obtained. When dicumarol is used alone, there usually is a lapse of approximately thirty-six to forty-eight hours before the prothrombin level is reduced sufficiently to prevent intravascular clotting. As nearly as could be determined, 20 patients in this series obtained an adequate anticoagulant effect within forty-eight hours from the onset of acute myocardial infarction. In 18 cases a period of two to five days elapsed before an adequate effect was obtained, and in 12 cases there was a lapse of more than five days.

Complications of Anticoagulant Therapy

The only complication of anticoagulant therapy is bleeding. In no instance in this series of cases was a serious bleeding complication encountered as the result of the use of the anticoagulant drugs (table 2). Spontaneous hemorrhage into the knee

TABLE 2
Acute Myocardial Infarction: Complications of
Anticoagulant Therapy

Complication	Instances
Hemorrhage	
Spontaneous hemorrhage in knee joint	1
Epistaxis	1
Hematuria (microscopic)	1
Lack of adequate control of anticoagulant	
Prothrombin time of more than 60 seconds	12
Menadione bisulfite necessary	6
Periods of ineffective control	6

joint occurred in one case. The effused blood later was aspirated, and aspiration was attended by no residual effects or further tendency toward bleeding. There was one case of mild spontaneous epistaxis which probably was related to the anticoagulant therapy. Gross hematuria was not encountered in any case and in only 1 case was microscopic hematuria found.

In spite of daily determinations of the prothrombin time, there was difficulty in maintenance of the desired deficiency of prothrombin in eighteen cases (36 per cent). There were twelve cases in which the prothrombin decreased to less than 10 per cent of normal, and for 6 of these patients the intravenous injection of menadione bisulfite (vitamin K) was necessary. There were 6 cases (12 per cent) in which there was a lapse of effective control, meaning that for a day or more the prothrombin content was more than 30 per cent of normal, and the therapy, therefore, was considered to have been temporarily ineffective. One of these cases is of especial interest since, during a

period of ineffective control in which the prothrombin time returned to normal, the patient suffered a second myocardial infarction. These experiences again serve to emphasize the importance of daily determinations of prothrombin time in the control of dosage of the drug, if it is to be used safely and effectively.

Incidence of Vascular Complications

A comparison of the incidence of vascular complications in the control series as reported by Nay and Barnes and the present series is summarized in table 3. Although the present series is small

TABLE 3
Acute Myocardial Infarction: Percentile Incidence of Vascular Complications After Anticoagulant Therapy and in Control Series

Complications	Per cent	
	Nay and Barnes 1945 100 cases	Parker and Barker 1947 50 cases
Vascular complications	37	4
Second myocardial infarction	15	2
Pulmonary embolus	14	(2*)
Cerebrovascular occlusion	8	2
Thrombophlebitis	7	0
Peripheral arterial occlusion	4	(2*)

*Before anticoagulant treatment was started.

and undoubtedly a much larger series will be necessary before positive conclusions can be reached, there can be no question that the incidence of vascular complications in the present series was surprisingly small.

Four patients in the group had secondary vascular complications after acute myocardial infarction. In 2 of these the vascular complications—pulmonary embolism in 1 case and embolic occlusion of a brachial artery in another—occurred before anticoagulant therapy was started. One patient, a man 64 years of age with hypertensive and coronary heart disease, auricular fibrillation and congestive heart failure, was under treatment in the hospital when acute anterior apical myocardial infarction developed, and four days later hemiplegia occurred on the left side. The cerebrovascular complication arose at a time when the prothrombin time was 20 per cent of normal. No additional embolic or thrombotic complications took place, and the patient recovered. In a man 52 years of age with hypertensive and coronary heart disease with previous congestive heart failure, a second acute myocardial infarction developed a month after his admission to the hospital. As mentioned before, this complication occurred when the effect of dicumarol was inadequate and

the patient had a normal prothrombin time. He died suddenly two weeks later, after the onset of auricular fibrillation. Although there were ten patients who, after relief of severe anginal pain attending the acute infarction, experienced subsequent anginal pain during the first two weeks of hospitalization, the man we have just mentioned constitutes the only instance in which clinical signs and positive electrocardiographic changes indicated an extension of the original infarction or a second myocardial infarction.

Two patients in this series of 50 cases (4 per cent) had secondary vascular complications while they were receiving anticoagulant therapy during their convalescent period in the hospital, in comparison to 37 per cent of patients in the previous series who had such complications in which anti-coagulants were not used.

Deaths and Findings at Necropsy

There were five deaths, a mortality rate of 10 per cent (table 4). In 2 cases death occurred suddenly on the second and ninth days after the onset of symptoms of acute myocardial infarction. In the three other fatalities there was indication of old healed infarction as well as recent acute infarction, and this was proved at necropsy in two of the three cases. Two of these patients died of congestive heart failure eighteen and twelve days respectively after admission to the hospital. I believe it is of especial interest to

TABLE 4
Acute Myocardial Infarction: Deaths and Cause of Death After Anticoagulant Therapy and in Control Series

Death, cause and necropsy results	Nay and Barnes 1945 13 cases	Parker and Barker 1947 5 cases
	Instances	
Cause of death		
Sudden death or acute heart failure	7	2
Second myocardial infarction	1	1
Congestive heart failure	2	2
Pulmonary embolism	1	0
Cerebral thrombosis	2	0
Necropsy findings	11	2
Mural thrombi	7	0
Pulmonary emboli	5	0

note that in neither of the two patients who came to necropsy were pulmonary emboli or mural cardiac thrombi found, whereas in eleven deaths with necropsy in the control series, mural thrombi were found in seven instances and pulmonary emboli in five.

The difference in the mortality rate in respect

to patients treated with anticoagulants and those not so treated was not notably different: 10 per cent and 13 per cent, respectively. It would seem, therefore, that although there was a marked reduction in the incidence of thrombo-embolic complications among the patients who received anticoagulant therapy, there was little influence on the total mortality rate.

Summary

Dicumarol alone or dicumarol in combination with heparin has been used in the management of 50 patients with acute myocardial infarction. The mortality rate in this series was 10 per cent. There were only two instances of secondary thrombo-embolic complications in this series (4 per cent), in contrast to an incidence of 37 per cent for such complications in a control series (Nay and Barnes) of 100 patients whose treatment was, in all respects, similar except that anticoagulants were not used. No serious complication occurred as the result of the use of anticoagulants and the results to date seem most favorable. I believe the results warrant a continuation of the use of these anticoagulants in acute myocardial infarction.

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THE MECHANICS OF FUNCTIONAL GASTRO-INTESTINAL COMPLAINTS

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A young man came into my office one day complaining of a bloating-ache in the abdomen, nausea, vomiting, heartburn, constipation, fatigue, and insomnia. His family history was bespeckled with much unhappiness. His nervous mother had kept the family medicine cabinet filled with

laxatives which she had used on the slightest provocation. He had been classified as 4F by the draft board because of nervous instability. Physical examination of the abdomen revealed generalized mild tenderness. Blood counts, gastric analysis, stomach and colon x-rays were normal.

In summing up his case, I turned to him quite confidently and said, "You have no organic disease, no ulcer nor cancer. Stop worrying and you will be all right."

"You mean I am imagining all my trouble, that it is all in my head?"

"No," I answered. "You actually have pain in your stomach."

"Then what is causing my pain?"

I could only answer that he had a "sensitive stomach" which was affected by any ill wind which came his way, but in my heart I realized that I could not really picture *what* was causing his distress.

Sixty to seventy per cent of the patients we see every day present similar problems. We dismiss them as "just neurotics" because we do not understand their disease. It is not sufficient for us to eliminate organic disease and to find emotional trauma in the patients' background. We must take the next step and attempt to discover the nature of the functional disturbances which occur in these patients.

Individuals who suffer from functional indigestion usually have multiple complaints such as, insomnia, fatigue, and hyperhidrosis. These will not concern us today. We shall turn our attention to symptoms referable to the gastro-intestinal tract, namely, heartburn, bloating, nausea, and vomiting. However, a few general considerations may be pertinent.

1. Individuals may vary in their reactivity to painful stimuli. This factor is difficult to test objectively. Some of the best work has been done by New York investigators.² When they projected a small beam of light on the forehead of an individual to be tested, they found that psychoneurotics perceived pain at the same intensity of stimulus as did the normal controls, but that they winced from the pain stimulus sooner than the controls. They suggest that there may be some difference in reactivity to pain in the psychoneurotic.

2. After repeated painful stimuli the subject becomes more adept at localizing his distress. Thus, when Jones⁴ put a balloon in the esophagus and dilated it suddenly, the subject, who had previously experienced pain from this maneuver, was able to localize his distress more accurately

than the inexperienced. Grinker observed during the war that when an individual first develops a functional pain, he describes and localizes it poorly, but that with persistence of distress, he restricts his distress to more definite confines.

3. The third generalization is that gastro-intestinal physiology is a complicated subject. The base line for determining gastro-intestinal functions is a fluctuating one. For example, if the vagus nerve in the cat is stimulated,⁶ *increased* or *decreased* contractility may result, depending upon the tone of the stomach at the time of stimulation. It is now believed that both the vagus and the splanchnic nerves carry motor, inhibitory, and afferent fibers.

Coming to our specific problem, we must first realize that the distress of functional indigestion originates in a certain part of the gastro-intestinal tract. Jones⁴ had normal individuals swallow a rubber tube with a balloon on the end of it. The balloon was distended at different levels in the gastro-intestinal tract. Distention of the lower esophagus resulted in a burning sensation quite sharply localized to the lower end of the sternum. This "heartburn" was similar in quality and location to that suffered in gastro-intestinal neurosis. Distention of the stomach was so difficult that definite conclusions could not be drawn. Distention of the duodenal cap, however, gave rise to a "dull ache," which was sharply localized to the right epigastrium. This type of distress is rarely described by the sufferers from functional indigestion. Pain from balloon distention of the colon was usually felt below the umbilicus poorly localized as a "fullness" or "bloating," similar again to the symptoms in gastro-intestinal neurosis. Distention of the cecum or the colonic flexures, however, usually resulted in fairly sharp localization over the area distended. This is probably due to the fixation of these flexures. At times, mid-line backache was the only symptom produced by distention of the colon. "This helps one to understand many of the backaches and pains so frequently noted in functional disturbances due to fatigue and the like, and so frequently diagnosed as 'arthritic pain due to intestinal absorption.'"⁴

The question now arises, what stimulus produces gastro-intestinal pain in the psychoneurotic individual? We have mentioned that dilation of the lower esophagus produces heartburn. It makes no difference what the distending force is, be it acid, alkali, air, or barium. With barium as the dilating force, Jones found the onset of heartburn to be associated with failure of the cardiac sphincter to relax and with the onset of reverse peristalsis. With subsidence of the re-

verse peristalsis the heartburn also subsided so that we can conclude that heartburn may be due to sudden dilation or reverse peristalsis in the lower esophagus.

Wolff and Wolf⁷ have opened new vistas in the study of stomach pain. Their patient was a second Alexis St. Martin. He had suffered a complete lye-stricture of the esophagus which had necessitated a permanent gastrostomy. Wolff and Wolf hired this man as a laboratory assistant and observed him for many months. They found that the normal gastric mucosa was insensitive to touch, pain, or faradic stimulation. However, when the patient experienced hostility, anxiety, tension, or desperation, the mucosa of the stomach became engorged, and hypersecretion and hyperperistalsis resulted. Contractions of the stomach⁸ which ordinarily were not painful now became so. Stimuli ordinarily painless, such as pinching of the mucosa, now became painful. Stroking of the mucosa with a glass rod produced erosions in the gastric mucosa indistinguishable from those seen in hypertrophic gastritis. Here is definite evidence of increased susceptibility of the stomach to pain during emotional crises.

On the other hand, fear, sadness, or emotions involving a desire for withdrawal were found to depress stomach motility, to blanch the mucosa, to retard secretions, and to result in nausea and vomiting. The essential stimulus for nausea and vomiting may, of course, originate in the central nervous system, but when nausea occurs, the stomach becomes atonic and dilates. The vomiting which follows is the result of a sudden contraction of the abdominal muscles. In Wolff and Wolf's patient, irritating fluids or a distended balloon placed in the cavity of the stomach produced nausea. They suggest that the sensation of nausea arises in the muscular or serosal coats of the stomach.

The point to be gained from such studies of gastric distress is that different qualities of emotion may produce different types of objective changes in the stomach and different types of subjective distress.

Distress origination in the colon has not been so thoroughly studied, but a few experiments should be cited to emphasize that changes in the colon may mirror those found in the stomach. For example,¹ the sight or smell of appetizing foods produces engorgement of colostomy stomata. On the contrary, the mucosa of a colostomy loop blanches when painful stimuli are applied to the abdomen, when the announcement is made that pain is about to be produced, or when unpleasant experiences are discussed. Pallor of an exteriorized colonic loop occurs in the dog when fright-

ened.³ This pallor occurs after adrenalectomy, suggesting that adrenalin may not be a factor. I am not aware of studies made on colonic distress under such circumstances, but such wide fluctuations in the mucosal appearance may well accompany colonic distress in the neurotic. They may relate, for example, to gas in the colon.

Oppenheimer⁸ has minimized swallowed air, air inserted from the rectum or gas from fermentation as being major factors in production of gas in the colon in normal individuals. He demonstrates that gas may suddenly appear in the colon after painful stimuli are applied to the body, as in ureteral catheterization. The colonic mucosa blanches under such conditions. Dr. Alvarez¹ has suggested that the sudden filling of the bowel with gas seen in nervous patients may be associated with blanching of the mucosa. The mechanism of gas formation may be an ill-defined "vacuum" process described by Oppenheimer or by disturbance in absorption and excretion of gas. We all know that nervous individuals get relief from their distress by expelling flatus, so that gas and distention of the colon has something to do with their distress. However, postoperative distention is painless until peristalsis sets in. The two necessary factors are, therefore, distention of the colon and a responsive musculature.

This leads us to a discussion of the role of "spasm." "Spasm" is a beautiful word, similar to "allergy," in that it quiets the querulous mind of the physician. But "spasm" is more difficult to assay than to talk about. I would like to be a bit heretical and mention that I do not think pure "spasm" has much to do with functional indigestion. A roentgenologist colleague of mine told me that the usual patient with "spastic colitis" had neither spasm nor inflammation as evidenced by the barium enema stimulus. Similarly, it has been my experience that tense individuals who have a tight pylorus at the time of a barium meal do not have any particular distress at the time of their "pylorospasm." I believe that gastro-intestinal distress is more likely to occur as a result of distention of an "irritable" viscus rather than by simple spasm.

Therapeusis of gastro-intestinal neurosis lies outside the scope of this paper. I do think it important, however, after simple psychotherapy has been applied, for the practitioner to take cognizance of the physiologic changes occurring in the gastro-intestinal tract by administering specific therapeutic measures. Phenobarbital alone may relieve distress. In anxiety states if belladonna is to be given, it should be given in tolerance doses. In depressions, when nausea and vomiting

are prominent, some drug should be given with an antbelladonna effect. One such drug is prostigmine bromide in 15 mgm. doses. This drug has been used in the heartburn of pregnancy with good results.

We stand in need today of more knowledge of psychophysiology. We need to know what is going on inside our patients with neurosis, and I am sure that as we learn more, our approach to the patient will undergo radical revision.

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THE ETIOLOGY OF HEMORRHAGE IN THE OCULAR FUNDUS

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The retinal vessels are the only vessels in the body readily accessible to direct examination. They form an important index to the state of the systemic circulation. In utilizing this great boon to diagnosis, it is important to all physicians to be able to differentiate between lesions due to local disturbances and the manifestations of general diseases in the eye.

The circulation of the eye, as in any organ, may be influenced by the conditions of the general circulation, but a rise or fall in the general blood pressure will be reflected in the eye only if the small vessels in the eye remain relatively passive.

The local anatomic and dynamic factors which influence the intra-ocular circulation are briefly as follows. The circulation in the eye is maintained in opposition to a relatively fixed intra-ocular pressure. Therefore the pressures within intra-ocular vessels are normally higher than in corresponding vessels in other tissues. Duke Elder¹ estimated normal pressures as:

1. Ophthalmic artery 110-125/60-80 mm. Hg.
2. Choroidal and retinal arterioles 85/65 mm. Hg.
3. Arterial limb of capillary 50-55 mm. Hg.

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4. Intra-ocular veins 1-2 mm. above intra-ocular pressure.

5. Intra-ocular pressure 15-25 mm. Hg.

6. Exit veins, extraocular, 7 mm. below intra-ocular.

The blood supply of the visible fundus is dual. The rods and cones, with possibly the highest metabolic rate of any cells in the body, have no blood supply. The choroid is a very vascular tissue which intimately surrounds the retina and is obviously so placed for the nutrition of these cells.

The visible retinal arteries are all of the order of arterioles and lie superficially in the nerve fiber layer immediately behind the internal limiting membrane. These vessels, as elsewhere in the central nervous system, are end arteries. They form two capillary plexuses: (1) an inner plexus forming a network in the nerve fiber layer, and (2) an outer plexus penetrating at right angles to the inner nuclear layer of the retina or about the inner half of the retina.

In the light of the researches of Krogh,² Lewis,³ and Dale,⁴ the capillaries must be considered the most purposeful and dynamic part of the vascular system. They are capable of such great physiologic variation that half the capillaries in a normal vascular tree may be empty of blood at one time.

Dilatation of the arterioles means more blood at a higher pressure reaches the eye. If the minute vessels are inactive, they will be passively dilated. There follows active hyperemia, increase in intra-ocular pressure, and possible increased permeability with the transudation of plasma. Contraction of the terminal loops can, however, neutralize these effects, and, conversely, dilatation increases them.

Contraction of the arterioles decreases the flow of blood and the capillary pressure. If the terminal loops also contract, parts of them may be emptied of blood. If they dilate, this is associated with low pressure and a movement of fluids from the chambers of the eye into the blood stream.

Contraction and dilatation of the terminal loops thus may effect compensation for or exaggeration of the effects of arteriolar narrowing or dilatation.

A constriction of the veins raises the pressure in the minute vessels and at its limit forces the arterial pressure to pile up until the capillary pressure becomes equal to arteriolar. With capillary dilatation, transudation occurs. The mechanism controlling these separate activities of the arterioles, capillaries and venules is both nervous and chemical.

Types of Hemorrhage

Blood is normally confined within the vascular system and is only extravasated when there is

(a) damage to the vessel wall allowing a leak, (b) obstruction to the circulation sufficient to break the vessel walls, or, (c) a combination of both. Duke Elder states, "In contradistinction to their frequency in the brain, hemorrhages from the arterioles of the retina are rare. It is probably only in cases of very advanced local atheromatous degeneration of the vessel walls, or in acute cases of septicemia and pyemia when an embolus lodges within their lumen that vessels larger than a capillary give way." In arteriolosclerosis the hemorrhage may be limited by the perivascular sheath and appear as a linear hemorrhage paralleling the vessel. In septicemia, the vessel may burst behind an embolus or the infectious process may weaken the walls, with profuse bleeding into the tissues or vitreous.

For maintenance of the circulation the pressure in the intra-ocular veins must be higher than the intra-ocular pressure. Duke Elder has shown that the venous pressure is largely controlled by the intra-ocular pressure, varying with it and maintaining a level approximately 2 mm. about it.

Sufficient obstruction to the venous return will result in venous hemorrhage. Thus coughing, vomiting, straining at stool, compression of the chest or neck may cause venous hemorrhage. Compression of the head at birth, and cavernous sinus thrombosis are other causes. The sheath of the optic nerve is continuous with the dura and intracranial pressure is transmitted directly to the central retinal vessels where they enter the nerve 10-15 mm. behind the globe. Venous hemorrhage occurs in papilledema, subarachnoid hemorrhage, and in optic neuritis due to pressure on this vein.

Venous hemorrhage may also be caused by weakening of the walls of the veins in phlebitis.

Capillary hemorrhages may be divided into seven classes (modified from Duke Elder):

1. Hemorrhages due to trauma, direct or indirect, producing sudden changes in intra-ocular, intracranial or venous pressure.

2. Hemorrhages due to obstruction, as in papilledema or subarachnoid hemorrhage.

3. Hemorrhages due to local inflammatory conditions in the retina.

4. Hemorrhages due to toxic states, such as in acute febrile and infectious diseases and cachectic states: influenza, malaria, dysentery, variola, etc.

5. Hemorrhages occurring in hypertension.

6. Hemorrhages in diabetes.

7. Hemorrhages occurring in diseases of the hematopoietic system, the anemias, leukemias, purpuras, haemophilia, etc.

The first three types are due to venous obstruction, the fourth, to the deleterious action on the

capillaries of circulating toxins. The fifth group is responsible for more than half of retinal hemorrhages and is discussed in greater detail under the retinopathies of hypertension. The etiology of retinal hemorrhages in diabetes is not fully understood at this time. In group 7, hemorrhages are not pressure phenomena but arise from defects in an endothelium depleted by nutritional failure of the blood.

The Appearance of Retinal Hemorrhages

No retinal vessels perforate deeper than the external molecular layer. All retinal hemorrhages therefore lie in the cerebral layers. The form of the hemorrhage depends on its location and the amount of blood extravasated. The hemorrhages are always most numerous and largest in the central fundus where the retina is thickest and there are more blood vessels. The large vessels lie in the nerve fiber layer and hemorrhages from the large vessels follow the nerve fibers to form linear or flame-shaped hemorrhages. If sufficiently large, the blood may collect beneath the internal limiting membrane, or may break through this to form a rounded subhyaloid hemorrhage or into the vitreous to form a vitreous hemorrhage. These large hemorrhages are usually venous in origin and when seen in young people, without arteriosclerosis, as in Eale's disease or juvenile retinal angiopathy, are commonly attributed to a tuberculous periphlebitis or thromboangiitis obliterans.

The capillary loops to the deeper layers of the retina run perpendicular to the surface, and deep hemorrhages are therefore small and rounded.

Subretinal hemorrhages arise from the choroid and usually present a dark mottled appearance. These may arise from trauma, Coat's disease, choroiditis, particularly choroiditis juxtapapillaris or choroidal sclerosis. Choroidal hemorrhages may present a slate grey color.

Mechanism of Hemorrhage

Venous Obstruction:—Possibly the most dramatic disturbance of intra-ocular dynamics occurs in papilledema. Intracranial pressure is transmitted hydrostatically to the optic nerve. The lamina cribosa thus forms a sort of a diaphragm between the intracranial pressure and the intra-ocular pressure. The intracranial pressure is directly applied to the central retinal artery and vein in their intravaginal course. It has been demonstrated that as intracranial pressure rises, the pressure in the central retinal vein rises, keeping 2 to 4 mm. Hg. above the intracranial pressure so that circulation is maintained. This obtains until the intracranial pressure reaches the intra-ocular arterial pressure at which point circulation ceases

(Baurmann).⁵ The normal relationship between the pressure in the artery and vein in the disc is 1:3. If for any reason the venous pressure rises or the arterial pressure falls so that the ratio drops to 1:1.5, papilledema results (Sobanski).⁶ The venous obstruction gives rise to venous congestion, stasis, edema, and hemorrhages. The swelling of the nerve head in papilledema is possibly created in part by the colloidal water binding property of white matter which includes the optic nerve (VanHeuven and Fischer).⁷

Trauma and local inflammatory lesions in the retina may also produce hemorrhages through a similar mechanism.

Arteriosclerosis:—The visible vessels of the fundus are of the order of arterioles. Senile changes may be manifested in these vessels, but atheromatous plaques are only rarely seen with the ophthalmoscope. The involutional changes of advancing age produce an increase in the connective and elastic tissue of the intima and media of the visible vessels. With decreased elasticity there occurs a dilatation of the lumen and increased tortuosity of the vessels.

Sclerosis of the arterioles, on the other hand, is characterized by an increased visibility of the vessel walls and a contraction of the vessels both in length and in diameter. This shrinkage of the arterial side of the vascular tree does not cause hemorrhages directly as its effect is to lower capillary pressure. The venous pressure, it will be remembered, reflects not the systemic pressure but the intra-ocular pressure. With decreased efficiency of circulation on the arterial side and constant venous pressure, prestasis and stasis occur in the terminal loops. If this advances to actual tissue starvation, transudation and edema result. The failure to carry off metabolic products may result in the accumulation of histamine-like substances which in turn have a vasodilator action. A vicious circle is formed, and thrombosis and hemorrhage occur.

The etiology of retinal hemorrhage in arteriosclerosis then, is capillary dysfunction and not high blood pressure. We are faced by a paradox. All recent work on the etiology of arteriosclerosis points to the importance of hypertension itself in the development of vascular changes. And yet, in the only part of the body where these changes can be watched, it is doubtful if hypertension really reaches the terminal loops and even the attenuated, constricted arterioles themselves attest that insufficient circulation and probably low pressure characterize the condition in the retina. As Foster Moore⁸ has pointed out, when the vascular system is diseased a fall in blood pressure may

be more deleterious than a rise because of the risk of depletion of an already inadequate circulation. The capillary is king. It delivers nutrition to the tissues and carries off metabolic wastes. The arterial wall and arterial pressure are of importance only in so far as these factors affect the efficient delivery of blood to the capillaries.

The following types of changes in retinal vessels should be recognized:

1. *Simple or active hyperemia* of vasodilation. Arteries, capillaries and veins are dilated. The blood flow is increased. The number of open capillaries is increased.

2. *Prestatic hyperemia* (neuromyolytic). Local vasodilation (possibly toxic) associated with paralysis of vasoconstriction and without dilatation of the artery central to the affected area leads to a slow and irregular circulation and the passage of fluids through the capillary walls and edema of the retina.

3. *Hemorrhage per diapedesum*. In prestatic hyperemia if the artery central to the affected area is still more constricted so that circulation is present but slowed, passage of red blood cells through the dilated capillaries may occur.

4. *Stasis* (occlusion). When the artery central to the affected area is markedly narrowed or occluded, the vasomotor system is paralyzed, the blood plasma is lost and blood cells are packed at a standstill in the dilated capillaries. Necrosis, characterized by white edema of the nerve fiber layers, occurs in a matter of minutes.

5. *Senile dilatation of the arteries and veins* due to loss of elasticity of the vessel walls.

6. *Arteriosclerosis*. Atheromatous plaques may occur in the walls of the central retinal artery and its main branches.

7. *Arteriosclerosis*. Arterioles may show:

- (a) Furring or roughening of the blood column and light reflex.
- (b) Generalized narrowing of arterioles.
- (c) Focal constriction or angiospasm.
- (d) Focal sclerosis.
- (e) Sheathing.

The Vascular Retinopathies

The original idea that "albuminuric retinitis" was correlated with albumin in the urine has long been discarded. The most constant features of the ocular lesions associated with nephritis are hypertension and attenuated arteries. Extremely marked retinopathies may be seen in essential hypertension with normal kidney function, while in the forms of nephritis which run their course without elevation of the blood pressure, normal fundi are the rule. Volhard⁹ and others veered so far from the original concepts as to deny any

casual relationship with nephritis and to attribute the retinopathy to the angiospasm primarily. Most pathologists now prefer to assume the presence of two factors: (1) hypertension with ischaemia and subsequent malnutrition together with (2) the effect of some toxin or toxins unknown. That these toxins may be derived from the kidney was demonstrated by the experiments of Goldblatt¹⁰ who simulated renal retinopathy in the dog and monkey by constriction of the renal artery. Injections of nephrotoxins into the carotid artery will produce retinal edema and degenerative changes (Yonechi).¹¹

When hypertension and toxemia are added to vascular sclerosis, fluffy white plaques (cotton wool patches) and white dots (edema residues) appear. The term retinopathy should be restricted to those fundus pictures which include cotton wool patches, edema or edema residues.

These retinopathies may be correlated with various types of hypertension. Nephritis without hypertension rarely affects the fundus, and hypertension plus attenuation of the arterioles, plus toxemia from other sources may produce the same retinopathy as nephritis.

Glomerulonephritis, when focal, with no arteriolar constriction and no hypertension, does not cause retinopathy. When it is diffuse and associated with narrowing of arterioles and hypertension, the fundus is likely to show narrowing and spasm of the arterioles, edema, cotton wool patches, hemorrhages and possible edema of the disc. This picture is called the *retinopathy of acute hypertension*.

When glomerulonephritis is subacute or chronic, the retinal changes, correspond to the amount of arterial constriction and the blood pressure. Ischemic or hemorrhagic infarction are likely to occur but persistent and recurrent hemorrhages and cotton wool patches indicate maximal contraction of the arterioles of the body and presage uremic termination. This is the *retinopathy of chronic progressive hypertension* (in glomerulonephritis).

Of the nephroses, the nephrosis of pregnancy is the only one with arterial constriction, hypertension and retinopathy—the retinopathy of acute hypertension.

Of the arteriosclerotic diseases of the kidney, arteriosclerosis of the renal artery and larger branches is not necessarily accompanied by arteriolar constriction and shows no retinopathy.

In essential hypertension or renal arteriosclerosis without insufficiency, the same rule holds.

In renal arteriosclerosis with renal insufficiency (malignant renal sclerosis or *terminal malignant hypertension*) there is marked sclerosis of the

arterioles. *Papilledema* is always present. Either edema of the retina (white hypertensive retinopathy) or hemorrhages (red hypertensive retinopathy) may predominate the picture. This picture is a death warrant, the average expectancy after the appearance being thirteen months.

If the patient survives the appearance of the retinopathy of an acute hypertension, the retinal changes pursue a definite evolution. The veins which, independent of the state of the kidneys, have been engorged, become tortuous and ensheathed with white lines, the arteries become ensheathed and are usually attenuated, the edema of the disc subsides, the disc becomes pale, and the retina is peppered with fine granules of pigment which have wandered into the atrophic retina. The retinopathy does not develop a second time.

Diabetic Retinopathy

Many eminent observers, including Duke Elder, have denied the occurrence of a true diabetic retinopathy, finding so much in common with the changes of arteriosclerosis and hypertension that they feel a definite differentiation is impossible. However, so many cases of diabetes have been diagnosed from the ophthalmoscopic appearance and so much statistical data has been assembled that we may follow Gresser,¹² Waite and Beetham,¹³ Wagener,¹⁴ and Elwyn¹⁵ in the belief that the picture is sometimes sufficiently characteristic to be diagnostic.

It is usually stated that diabetic retinopathy does not occur in young individuals, but O'Brien and Allen¹⁶ found retinal lesions in 4 per cent of 555 diabetics under the age of 31. Statistics in several large series correspond closely with those of Waite and Beetham who found deep retinal hemorrhages in 18.6 per cent of 3,915 visible fundi in diabetics of all ages. The relative frequency has increased in recent years. Wagener states that diabetic retinopathy occurs in 60 per cent of diabetics of more than ten years duration. The retinopathy is essentially chronic and progressive.

The characteristic changes, which are bilateral, are found in the central fundus. The optic disc is normal in appearance. There is no edema. Numerous small, rounded, deep hemorrhages are scattered throughout. There are usually a few linear and flame shaped hemorrhages. Discrete or confluent waxy dots, sometimes arranged in a circinate pattern about the macula, may be seen. In advanced cases varicosities of the smaller veins, large hemorrhages, and even preretinal hemorrhages may be seen. Organization of these hem-

orrhages may lead to the formation of new vessels on the surface of the retina.

Many of these diabetics are old and also show arteriosclerotic changes in the fundus, but diabetic retinopathy may occur without arteriosclerosis. Waite and Beetham conclude their study with the statement: "Deep retinal hemorrhages multiply with age and multiply with continued duration of diabetes out of proportion to the age factor, but they show no obvious correlation with sclerosis of retinal vessels, with vascular hypertension, with insulin dosage, or with blood sugar or calcium levels." There is in diabetes some factor which produces venous stasis, and fibrosis of the intima of the venules (Agatston,¹⁷ O'Brien and Allen). and hyalin degeneration in the media of the veins. The retinopathy of arteriosclerosis rises primarily in spasm of the arterioles; the retinopathy of diabetes arises from venous sclerosis, obstruction, a rise in capillary pressure, hemorrhage per diapedesum. This results in a chronic state of subnutrition and of deficient oxygen supply with the consequent appearance of hyaline and lipoids. The increasing number of diabetics who are losing their vision while apparently under control is a challenge to medicine to discover the factor in diabetes which produces this primary damage to the intima of the venules.

The Effect of the Blood Dyscrasias

It has long been recognized that obstruction of the pulmonary circulation and polycythemia give rise to engorgement of the retinal veins, and venous and capillary hemorrhages may result. It is, however, in the blood dyscrasias that the most striking retinal manifestations are seen. These diseases have one factor in common, anemia.

The most acute form of anemia of the retina occurs in excessive loss of blood. Fries¹⁸ accumulated statistics from the literature on 95 cases, of which 34 were due to gastro-intestinal hemorrhage, and 24 occurred in hemorrhage from the uterus. Sudden blindness in these cases was usually accompanied by a fundus picture of edema of the nerve head and retina with hemorrhages surrounding the disc.

In simple anemia, such as chlorosis, the fundus is definitely pale. The veins are broadened and so light in color as to approach the color of the arteries. Gowers¹⁹ believes this apparent broadening is due not to overfilling but to the flattening of underfilled vessels. In all anemia the arteries appear smaller than normal.

In pernicious anemia, the fundus is not only pale but presents a lemon yellow pallor. Hemorrhages occur in 70 per cent of cases according to Cabot,²⁰ and especially when the red count falls

below 1,500,000. The hemorrhages are usually small, flame shaped, superficial, and in the central fundus. Some edema and edema residues may occur as a result of nutritional failure. The high incidence of hemorrhage in this disease may be attributed to increased capillary permeability due to nutritional disturbance of the endothelium, and perhaps in part to the reduction in the number of platelets in the blood. White spots occasionally seen in the center of hemorrhages in pernicious anemia are not characteristic and represent areas of clearing.

In the hemorrhagic diatheses, retinal hemorrhages are rather rare but do occur, especially in essential thrombocytopenia and anaphylactoid purpura.

Leukemic retinopathy is common to all types of leukemia. Of 138 cases Borgeson and Wagener²¹ found fundus changes in 70 per cent of acute and 63 per cent of chronic leukemia. It may be detected early in the disease and in the more advanced stages is pathognomonic.

The ophthalmoscopic picture is characterized by changes in the vessels, hemorrhages and edema of the disc. The veins are distended early in the disease, often three to four times the diameter of corresponding arteries which may themselves be somewhat dilated and tortuous. The veins are darker than normal at first, but as the changes increase, the arteries and veins become yellowish, approaching each other in color. The veins are engorged, tortuous, and deeply indented at the crossings. They present the appearance of strings of sausages. Hemorrhages appear, at first small and widely scattered, superficial or deep. Typically they present a central white area which may be quite large and nodular with a comparatively narrow dark red border. Oeffler²² states that in normal circulation the white corpuscles form a peripheral stream moving ten to twelve times as slowly as the axis stream of red corpuscles, and explains the leukemic retinopathy on the basis of an increase in this disparity. With the increased white count, a thick layer of leukocytes collects along the walls. This stasis leads to distension and tortuosity of the veins and the migration of leukocytes, first into the perivascular lymph channels where they are seen as white lines and sheaths along the vessels. The stasis results in edema of the retina and nerve head and later the appearance of waxy edema residues. In the fully developed retinopathy, the extravasation of blood elements spreads throughout the retina and choroid. The retina appears thickened and yellowish, and the sheaths around the vessels may become as broad as the vessels themselves.

Summary

Extravasation of blood in the ocular fundus is common. This is due in part to a peculiar anatomic situation in which arterial pressure varies with systemic changes and the venous pressure reflects the local intra-ocular pressure.

Most hemorrhages in the fundus are capillary hemorrhages. Arterial hemorrhages occur in atheromatous changes in the principal branches of the central retinal artery and in septicemia. Venous hemorrhages occur in mechanical or inflammatory obstruction of the veins.

Capillary hemorrhages may also result from venous obstruction. They may occur in toxic states due to toxemia. In anemias, defects in the endothelium of the capillaries may be due to nutritional failure of the blood. However, the majority of retinal hemorrhages are arteriosclerotic in origin. The cause of capillary hemorrhages in arteriosclerosis is a diminution in the capillary pressure due to narrowing of the arterioles. With constant venous pressure, stasis, transudation and hemorrhage occur in the terminal loops.

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THE Rh FACTOR

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Approximately 1,500 articles on the Rh factor have appeared in the medical literature during the past seven years. In 1940 Landsteiner and Wiener described a new agglutination reaction. This reaction occurred when human cells were mixed with a serum they prepared by injecting rabbit red cells into a Macus Rhesus monkey. The substance in the red cells causing the reaction was called the Rh factor.

This Rh factor is an agglutinin present in human red cells. It is present in 85 per cent of all white people. Those having it are called Rh positive. The remaining 15 per cent who do not have it are called Rh negative. The percentage varies in different races, less than 1 per cent of Jews, Negroes, and Chinese being Rh negative. Sex distribution is equal. Of several different types of Rh agglutinogens now described, the only one of clinical importance is designated as Rh_o. Typing sera to demonstrate the others is not commercially available.

The Rh factor when introduced into the circulation of an Rh negative individual acts as an antigen and excites an antibody response. These antibodies are known as anti-Rh agglutinins.

Why is the Rh factor so important?

1. It causes 92 per cent of all cases of erythroblastosis fetalis.
2. It causes 16 to 30 per cent of all stillbirths.
3. It causes many intragroup blood transfusion reactions.

In one out of each eight marriages in the white race, the father is Rh positive and the mother is Rh negative. The Rh factor is inherited as a mendelian dominant characteristic. If both genes of the Rh chromosome in an Rh positive father are Rh positive, the father is homozygous. When the mother is Rh negative, all their children will be Rh positive. If the father on the other hand has one Rh positive gene and one Rh negative in his Rh chromosome, only half their children will be Rh positive. Statistical studies have shown that erythroblastosis occurs in one of each 300 live births, whereas it would theoretically be expected in at least one of each 25 live births. The following explanations have been proposed:

- (1) A constitutional or P factor is necessary. Only 2 or 3 per cent of people have this factor.
- (2) Erythroblastosis usually occurs in multiparae, the first child usually escaping the disease.
- (3) The father may be heterozygous.

How does the Rh factor produce erythroblastosis and stillbirth? Iso-immunization of the mother must take place. For this to occur some of the Rh positive cells of the baby must enter the circulation of the Rh negative mother. Whether this occurs during pregnancy or during delivery is not clear. The chorionic villi of the placenta, however, cover an approximate area of 70 square feet and if placed end to end would cover 11.4 miles. Since the maternal and fetal circulation are separated by a thin layer of cells, it seems likely that as a result of minor injury a small break may occur during pregnancy. That the exchange may occur during delivery is proved by the fact that bits of chorionic villi have been demonstrated in the lungs of mothers dying during delivery. Only small amounts of blood are necessary for the iso-immunization, for this may be produced in the rabbit by injecting only .0014 cubic centimeters of blood.

As soon as the baby's Rh positive cells get into the mother's circulation, an antibody response takes place. These antibodies are known as anti-Rh agglutinins. They may be of four types:

- (1) Saline agglutinins.
- (2) Conglutinins, which require the presence of X protein found normally in plasma.
- (3) Blocking antibodies.
- (4) Coombs antibodies, which require the presence of anti-human precipitin.

Several of these types may be present in the same patient, though saline agglutinins and blocking antibodies never occur together. These agglutinins pass freely through the placenta back into the fetal circulation. There they produce either agglutination or hemolysis, or both. Erythroblastosis fetalis is produced by these processes.

Four types of erythroblastosis fetalis may occur. These are the hydropic, the hemorrhagic, the icteric, and the anemic types. The kind of anti-Rh agglutinins present govern to a certain extent the type of erythroblastosis. Conglutinins are usually present in high titre in the icteric and anemic types. Blocking antibodies are usually present in high titre in the hydropic type. The mortality is highest in the hydropic type. The icteric type may develop kernicterus which is pigment deposition in the brain, particularly in the basal ganglia. Babies with kernicterus may be left with either spastic paralysis or mental retardation. Erythroblastosis usually appears in the third or

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fourth baby. The stimulus of repeated iso-immunization with each succeeding pregnancy is necessary to raise the anti-Rh agglutinin titre to levels sufficient to produce symptoms. Erythroblastosis in the first baby usually means that the woman has been previously sensitized by transfusion. Intramuscular administration of blood produces the same response as intravenous administration.

Stillbirths occur when the fetal damage is severe enough to cause death in utero. Spontaneous abortion may be produced but it usually occurs around the sixth or seventh month. Abortions occurring earlier in pregnancy are usually due to some other cause.

The diagnosis of erythroblastosis fetalis is based on the following findings, though all of them are not always present:

1. The father is Rh positive, the baby is Rh positive, and the mother is Rh negative. It should be noted that all babies under three months of age are Rh positive, using animal testing sera; hence, human serum must be used.

2. Clinical evidence of any one of the four types is present or develops shortly after birth.

3. The blood smears of the baby show large numbers of nucleated red cells.

4. The mother's serum contains anti-Rh agglutinins.

Erythroblastosis should be suspected when the placenta is unusually large or when hydramnios is present.

The treatment of erythroblastosis fetalis consists of:

1. Blood transfusions of Rh negative blood to keep the red blood count above 4,500,000. Do not use the mother's blood.

2. Substitution transfusion whenever possible in the icteric type to prevent kernicterus. This is done by simultaneously withdrawing 80 per cent of the calculated circulating blood volume and replacing it with Rh negative blood. This procedure should be done as soon as possible after birth.

3. Bottle feeding—The mother's milk contains anti-Rh agglutinins; hence, the baby should not be breast fed.

4. Caesarean section at the eighth month in suspected cases may be considered but results of this procedure have not been encouraging.

What advice should you give parents who are worried about the Rh factor?

1. Advise an Rh determination on the wife.
2. If the wife is Rh positive, assure them there is nothing to worry about.
3. If the wife is Rh negative, advise an Rh determination on the husband.
4. If the husband is Rh positive and the wife is

Rh negative, the first baby should be all right but there is one chance in ten that the third or fourth baby will be affected.

5. If erythroblastosis occurs, Rh type all other children. If one of them is Rh negative, the father is heterozygous and there is a 50 per cent chance of again having a normal baby. If all other children are Rh positive, then in all likelihood subsequent babies will also have erythroblastosis.

6. Advise an anti-Rh agglutinin titre on the mother about the seventh month. If blocking antibodies are present, in high titre, a hydropic baby will occur in about 30 per cent of cases.

7. Assure them that there is no way to prevent erythroblastosis fetalis.

The Rh factor produces blood transfusion reactions also by iso-immunization. When Rh positive blood is given to a susceptible Rh negative patient, anti Rh agglutinins are produced in approximately three weeks.

Subsequent transfusions of Rh positive blood result in severe transfusion reactions. Rh negative women sensitized by pregnancy will react in the same way to the first transfusion. When transfusion is contemplated, an Rh typing should be done on females of all ages. The Rh negatives should receive only Rh negative blood. Administration of Rh positive blood to Rh negative female infants may result in sensitization so that erythroblastosis fetalis will occur in the first baby.

Rh typing on all males receiving multiple transfusions should be done. The Rh negatives should receive only Rh negative blood.

If facilities for Rh typing are not available, a duplicate blood crossmatch may be set up and placed in an incubator at 37.5° C. for one hour. If the crossmatch at room temperature is compatible and that at incubator temperature is incompatible, a possible Rh incompatibility is indicated and the blood should not be given. If both are compatible, the blood may be given with safety. Anti-Rh agglutinins are warm agglutinins and act best at 37.5° C.

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DENTAL PROBLEMS IN EAR, NOSE AND THROAT

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Because of the number of patients who come to me with dental complications, I am prompted first of all to urge closer cooperation between dentists and otolaryngologists. That this closer cooperation is mutually beneficial should be obvious, and it has been stressed by Dr. Gordon Berry,¹ Drs. S. S. Hall and H. V. Thomas,² Dr. Ralph McQuiston,³ and others among the medical and dental professions.

This discussion will be limited to maxillary sinusitis of dental origin, antra-oral fistula, cellulitis of the jaw and cheek, and infections of the parapharyngeal and sublingual spaces.

Maxillary Sinusitis

The relation of the upper bicuspid and molars to the maxillary sinus is well known, but a short review to stress certain points will not be amiss. Depending on how much of the maxillary bone is replaced by the sinus as it develops, the bone between the teeth and the antral lining is of varying thickness. In some specimens there are actual dehiscences, in others as much as a quarter of an inch of bone. Dr. W. H. Bauer⁴ of St. Louis, after studying microscopic sections, has stressed this and the fact that, in any case, infection may pass from the teeth to the antrum by way of a network of blood vessels and lymphatics extending from the periodontal membrane into the antral mucosa. However, as he points out, these alterations of the sinus membrane which may arise from severe pyorrhea or apical abscesses are more or less limited to the part of the mucous membrane near the dental focus. How much this path of extension is responsible for maxillary sinusitis is not definitely known, but this may account for some of the flare-ups of the sinuses following tooth extractions when the sinus has not been fractured into, as well as those cases of antral infection without actual invasion by contiguity from apical abscesses.

The frequency of antral infections from the teeth has been variously reported, but the figure 22 per cent reported by Hempstead⁵ seems quite average. The maxillary sinus may be infected from diseased roots of the upper bicuspid and molars; retained unerupted cuspid, bicuspid, or molar teeth; and by extraction accidents in which the floor of the antrum is perforated, or a tooth or root is pushed into the sinus. The infecting organisms are usually the *Staphylococcus* *Streptococcus*, *pneumococcus*, and *Vincent's* organisms.

The symptoms hardly need enumerating but the history should be stressed, for sinusitis arising from the teeth usually does not follow a cold as does most sinusitis. Frequently, a definite history of a faulty or aching tooth or an extraction is obtainable. The one diagnostic procedure which is most important is the antrum puncture. I prefer the Dean cannula through the inferior meatal wall of the sinus, or puncture through the membranous portion of the middle meatus as advocated by Dr. Van Alyea.⁶ The patency of the ostium of the sinus is determined better by these two methods than by trying to pass a cannula into the natural ostium. This is important prognostically for if the ostium is not patent then the sinus cannot be expected to clear up. As is well known, the pus from a sinus infection of dental origin has a characteristically foul odor.

The treatment of maxillary sinusitis of dental origin has changed during the past 20 years. Formerly it was more radical than now, and as diagnosis and treatment becomes more prompt and anti-biotics more effective, treatment will probably become more conservative. The Caldwell-Luc operation was formerly used frequently in these cases, and more recently the intranasal antral window. At the present time, the following procedures are recommended: When the antrum has been infected from a tooth, the latter should be extracted and the sinus irrigated by the otolaryngologist with normal saline every day or every other day for six or eight times or until the sinus is clear on two successive washings. The irrigations are followed by the instillation of .25 per cent paredrine with 800 units of calcium penicillin to the cubic centimeter.

A thick, tenacious glob of mucus is often formed in the sinus after several washings and near the end of an infection. This thick mucus can hardly be washed out when the natural ostium is cannulated. If the usual middle meatus route is used and this glob of mucus is not washed out, the sinus may appear to be healed before it actually is. If and when this thick mucus forms, a change to a suspension of sulfathiazole crystals in paredrine is made. It is believed that the vasoconstrictor in the solution instilled is beneficial in opening the ostium of the sinus when it is narrowed by congestion and edema. If the sinusitis is obviously not responding to irrigations, an intranasal antrotomy or radical antrotomy (Caldwell-Luc) is then done. Which of these operations is selected depends on the character and amount of the discharge and the character of the lining as indicated by the capacity of the sinus on irrigation and/or by lipiodol x-rays.

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If the dentist fractures into an uninfected sinus there should be no probing or packing, but the gums should be sutured immediately. The dentist should not feel that he is at fault when the antrum is fractured, and he should not hesitate to refer the patient to the otolaryngologist for care. The sinus should be irrigated and vasoconstrictor-penicillin solution instilled daily for several days until the danger of a sinusitis is past. If the dentist fractures or opens into an already infected sinus and pus is seen by him, he should irrigate the antrum through the alveolar ridge with normal saline solution and suture the gums immediately. The same day the otolaryngologist should instill some penicillin solution. If the infection does not seem severe, irrigations and instillations of penicillin may be used for six or eight times. If this is not sufficient to clear up the infection, an antrotomy should be done. If the sinusitis has been chronic, an antrotomy will probably have to be done, because penicillin is not as effective in chronic as in acute sinusitis.

If a tooth or tooth-root has been pushed into an antrum, the socket should not be enlarged or an attempt made to get the tooth out through the socket. The gums should be sutured and then a Caldwell-Luc or similar canine fossa operation should be done to remove the foreign body from the antrum. If no infection is present, the tooth may be removed and no inferior meatal window made, if the antrum is irrigated postoperatively. If infection is present in the sinus, then the Caldwell-Luc operation should be completed by the inferior meatal window. The sinus lining need be removed only when hyperplastic. As to the question of who should get the tooth out of the sinus—the dentist or the otolaryngologist—I believe that if the dentist is an oral surgeon, he should go ahead and remove it. However, if an average dentist, he is not as well equipped as the rhinologist to do the work and therefore the rhinologist should do it.

Antra-Oral Fistula

An antra-oral fistula following tooth extraction is fairly frequent. Most of these will close without a great deal of trouble if taken care of as outlined above. When one persists, surgery becomes necessary. First of all, the maxillary sinusitis must be cleared up by antral irrigation, antral window, or radical antrotomy as indicated by the severity or chronicity of the infection. At the closure, the fistulous tract must be thoroughly curetted to remove all epithelium and infected granulations, sequestra, root remnants, and necrotic bone. Sliding flaps are then made by one

of several methods. One is that of Dr. Ralph McQuiston³ using sliding bridge flaps from the buccal and lingual sides of the alveolus, approximated at the lower end of the fistula. Another method is one using embrocation of the flaps over the fistula. This is especially valuable in large fistulae. The first flap is prepared from the buccal side, extending out onto the cheek if necessary, and using the entire thickness of the gum. The flap is then turned medially into the oral opening of the fistula. The medial flap is prepared, care being taken to make the incision on the palate medial to the greater palatine artery and nerve so as to maintain the blood supply to the flap from behind. The shape of this flap is such that when it is slid over it fills the space below the fistula. The epithelium is then removed from the first flap where the second covers it. The tip of the lateral flap is sutured near the center of the medial flap and the lateral edge of the medial flap is sutured to the cheek, using chromic catgut. The edges of the epithelium are then approximated with black silk. In any method of closure of an antra-oral fistula, the sinus must be watched carefully for infection after surgery.

Cellulitis

Cellulitis of the jaw and cheek is quite common secondary to caries, apical abscess, or extraction. When these cases are severe and accompanied by fever, they are hospitalized and 25,000 units of penicillin are given intramuscularly every three hours. Dr. Alden of St. Louis has reported⁷ the beneficial action of arsenicals in cellulitis of dental origin because they are very frequently associated with a spirochetal infection. My patients are always given neoarsphenamine 0.03 to 0.06 gram intravenously, or bismarsen 0.01 to 0.02 gram intramuscularly. These are most effective when given during the first 48 to 72 hours, but are of help even later. They should be continued daily or every other day for three to six doses as indicated, and are of great help. Sulfadiazine and soda bicarbonate are also given. X-ray therapy is also of help when it is available.

While this may seem radical treatment for a relatively mild condition, a few cases of parapharyngeal and sublingual abscess made me believe that it is justified. When cellulitis spreads it may involve the parapharyngeal space, the masticator space, or the sublingual space, depending on the site of the tooth involved and the fascial planes reached by the original cellulitis. The third molars tend to go into the parapharyngeal space, the lower anterior molars and bicuspids into the sublingual space.

Parapharyngeal Space

The pharyngomaxillary or parapharyngeal space is a funnel-shaped space with the base at the base of the skull, and the apex below. It is bounded medially by the superior constrictor of the pharynx; posteriorly by the prevertebral muscles and fascia; laterally by the internal pterygoid muscle and parotid gland. The space is divided into an anterior and a posterior compartment by the styloid process and its attached muscles and fascia. The anterior compartment ends below at the stylomandibular ligament between the inferior pole of the parotid gland and the posterior pole of the submaxillary gland. Here it communicates with the floor of the mouth at the posterior margin of the mylohyoid muscle, along the styloglossus muscle and the glossopharyngeal nerve, opening into the space between the genioglossus and hyoglossus muscles.

The anterior compartment contains loose areolar tissue, lymph channels and nodes throughout and in its lower portion the glossopharyngeal nerve; in its mid-portion the muscles inserting into the styloid process as well as the internal pterygoid muscle; and in its upper portion the pterygoid muscles, pterygoid plexus of veins, internal maxillary and middle meningeal arteries, and the third branch of the fifth cranial nerve. The posterior compartment ends below at the level of the hyoid bone at the bifurcation of the carotid artery and contains at all levels the deep cervical chain of lymph nodes, the internal carotid artery, internal jugular vein, the sympathetic nerves, and the ninth, tenth, and twelfth cranial nerves. Below, the posterior compartment communicates with the upper aperture of the chest. The anterior and posterior compartments communicate in their upper portions.

Infection enters the parapharyngeal space by tissue contiguity, lymph channels, and blood vessels, usually by the first two. In dental infections the space is entered directly from the posterior molars or by way of the lymph channels. If infection arises from the anterior molars or the bicuspids, it starts in the floor of the mouth and travels along the styloglossus muscle and glossopharyngeal nerve. The type of infection may be fulminating sepsis, phlegmon, or abscess. In fulminating sepsis the general symptoms are severe and the local symptoms and findings less severe proportionately, while in abscess the local symptoms are severe and the general symptoms not so severe. In phlegmon the general and local symptoms are more or less equal. General symptoms are chills, septic type of fever, leukocytosis or leukopenia, and prostration. Local symptoms are

trismus, difficulty in swallowing, pain, headache in areas of reference of the fifth cranial nerve, or paralysis of the tongue. Findings include trismus, swelling in the lateral pharyngeal wall and at the angle of the jaw which does not become fluctuant.

The treatment of infection in the parapharyngeal space requires a lot of judgment as to when to drain. In general it is better to do it early than late. In the early stages of infection, large doses of penicillin, 50,000 units every three hours, and sulfadiazine should be started. If the patient is seen in the first 48 to 72 hours neosarsphenamine or bismarsen should be used as discussed under cellulitis. Blood transfusions are also of help, for possible immune bodies even though the red count is not down. Some cases will subside on this medical treatment but if the symptoms are not improving, or if the patient is getting worse, then external operation should be done. General anesthesia with ether, or preferably with 1 per cent pentothal sodium and curare is best. If there is too much respiratory obstruction, a tracheotomy is indicated.

When the parapharyngeal space is approached, the incision may be the "T" incision of Dr. Mosher,⁸ or along the anterior border of the sternocleidomastoid muscle. In either case, the incision is carried deep enough to expose the stylomandibular fascia between the parotid and submaxillary glands. A blunt hemostat is then used to perforate this and enter the space just medial to the internal pterygoid muscle. Or if the landmarks are obscured there or it is felt that the great vessels should be explored as in the phlegmonous type, the superficial fascia is incised and the posterior belly of the digastric muscle just above and behind the hyoid bone can be identified and the space entered just above it. By extending the incision along the anterior border of the sternomastoid muscle, the great vessels may be explored and if either is involved it can be ligated as indicated. If infection is severe or necrotising, it may obviate another operation if a ligature of chromic catgut is placed around the internal, external, common carotid and ascending pharyngeal arteries, but not tied. In case of a complicating hemorrhage, the vessels could then be tied off from the smaller to the larger until the hemorrhage is controlled.⁹

Sublingual Infection

The submandibular or sublingual space is bounded below by the mylohyoid muscle, on the sides by the bodies of the mandible, posteriorly by the confluent muscles of the base of the tongue, and above by the tongue and mucosa of the floor of the mouth. The geniohyoid muscles traverse

the space anteroposteriorly near the midline. In the space are loose connective tissue, lymph nodes, the glossopharyngeal nerve and lingual artery and its branches. Infection in this space from dental origin may be lateral to the genio-hyoid muscle and close to the body of the mandible and submaxillary fossa, or in the midline between the genio-hyoid muscles, or may involve the whole space diffusely.

The symptoms are pain, difficulty in swallowing and talking, chills, fever, and prostration. Sudden edema of the larynx may occur. The tongue is swollen and pushed up if the swelling is mainly in the midline or bilateral, or to the opposite side if it is mainly unilateral. The mucosa of the floor of the mouth is edematous and there is boardlike hardness externally.

Treatment early is the same as discussed under cellulitis and parapharyngeal infections. If the medical treatment does not result in resorption, then surgical drainage is indicated, almost always by the external route. Anesthesia should be with ether or 1 per cent pentothal sodium and curare, and the patient should be watched closely for edema of the larynx. If the swelling is chiefly in the midline, the incision is made there and carried down to the mylohyoid muscle. This is then perforated by a fine-pointed curved hemostat in various directions until pus is encountered. The opening in the muscle and fascia is then enlarged and a drain inserted for irrigation with penicillin. If the swelling is lateral, the incision is made in the submaxillary region. The facial artery and vein are ligated and cut, and the submaxillary gland elevated. The medial fascia of the fossa is then perforated with a fine pointed hemostat until pus is located. The opening is enlarged and a drain inserted for penicillin irrigation. One should always have a tracheotomy set ready because edema of the larynx can develop rapidly at any time before resolution begins.

Conclusions

1. A plea is made for the otolaryngologist to be more dental conscious and for greater cooperation between dentist and otolaryngologist when infection outside the alveolar process complicates some dental condition.

2. In maxillary sinusitis of dental origin, the antrum should be irrigated with saline daily or every other day, followed by the instillation of a vasoconstrictor and penicillin solution, or vasoconstrictor and sulfathiazole solution.

3. Only those which do not respond to irrigation or are obviously chronic, those in which an oral fistula will not close, or those containing a foreign body such as a tooth, are treated surgically by an intranasal window or radical antrotomy.

4. In closing an antra-oral fistula, infection is first eradicated from the sinus by irrigation, intranasal window, or radical antrotomy as indicated by the severity or chronicity of the infection. All foreign material such as tooth remnants, sequestra and granulations and epithelium are removed from the tract. One of several types of sliding flaps are used to close the fistula.

5. Cellulitis of the cheek and jaw of dental origin, when accompanied by fever, should be treated with intramuscular penicillin, neoarsphenamine or bismarsen within the first 48 to 72 hours, sulfadiazine and sodium bicarbonate, and x-rays if available. The seriousness of cellulitis when it spreads to the parapharyngeal or sublingual space justifies this vigorous treatment.

6. Infection of the parapharyngeal space from dental pathology takes place by direct extension or by way of lymphatics from the floor of the mouth along the styloglossus muscle and glossopharyngeal nerve. Infection in this space must be thought of early in any case with trismus, and treatment started as for cellulitis. If there is inadequate response to treatment, external drainage is indicated, and it is better to open early than late. A "T" incision in the submaxillary fossa or an incision along the anterior border of the sternomastoid muscle is used and the space entered through the stylomandibular ligament or just above the posterior belly of the digastric muscle.

7. Infection of the sublingual space of dental origin is treated as cellulitis early and incision made in the midline or through the submaxillary fossa as indicated by the swelling and the displacement of the tongue.

8. General anesthesia with ether or with 1 per cent pentothal sodium and curare is recommended in opening parapharyngeal or sublingual infections.

9. A tracheotomy set should be kept in readiness for sudden respiratory obstruction in these cases.

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Discussion

John E. Rock, M.D., Davenport: Dr. Anneberg has chosen a subject which is not new but one that deserves consideration by all of us, because we are constantly called upon to handle just such cases as he has so well described.

I believe that in the past twenty years dentists have come to realize the importance of early proper treatment and do not feel that when they do break into an antrum—infected or otherwise—they lose face when they refer such patients to a rhinologist.

Surely it has become a rarity to see a patient whose maxillary sinus has been irrigated for weeks through the alveolar opening.

The procedure for the care of these patients as outlined by the essayist needs no additions. Perhaps it might be stressed a bit that prolonged irrigations should be discouraged, because I think all of us have had patients who for one reason or another had to stop treatment, and on their return we have found the maxillary sinus clear and well. That should slow us down and give us the hint not to irrigate them to death.

Dentists as a whole must be complimented on their ability to differentiate between "toothache" and the pain of an acute maxillary sinusitis.

In conclusion, I would like to add a word in regard to the patients who have vague pains in and about an ear, sore throat in which the examiner can see no sign of inflammation, and often pain which radiates down into the side of the neck or may even simulate otitis media. These patients have no fever as a rule and can often be entirely relieved by giving the third molar tooth the attention and consideration it needs and deserves.

College of Medicine
State University of Iowa
**CLINICOPATHOLOGIC
CONFERENCE**
October 6, 1947

Summary of Clinical Record

This patient was the result of a second pregnancy. Her sister died at the age of three months of "flu and complications." During her gestational period, the mother had ankle edema and hypertension. The patient was born spontaneously at full-term on Dec. 4, 1945, and weighed 8 lbs., 2 oz. Cyanosis, edema of her face, and bilateral clubfeet were noted immediately after birth. Cyanosis disappeared promptly. On the first or second day of life jaundice was noted. The edema disappeared on the tenth day, but the mother was uncertain as to when the jaundice subsided. At the age of two or three weeks, she developed coryza complicated by a purulent right

otitis media. She was hospitalized for several days, treated with penicillin orally and recovered.

On Feb. 15, 1946, at ten weeks of age, she first entered this hospital for correction of her clubfeet in the Department of Orthopedics. On February 16, signs of pneumonia were elicited, and she was transferred to the Department of Pediatrics. She was admitted to this hospital on nine different occasions, for periods varying from four to eighty-one days, and spent a total of one hundred seventy days, or two-fifths of her lifetime, in the hospital. During those one hundred and seventy days there were certain outstanding features, some of which pointed to the underlying disease which caused her death and some of which complicated and delayed the establishment of an early diagnosis.

Bilateral clubfoot deformities (bilateral talipes equinovarus) were treated with Denis-Browne splints and later with Kite casts. On Aug. 5, 1946, all orthopedic treatment was discontinued because of the patient's poor general health. Pneumonitis, diagnosed on Feb. 16, 1946, responded unsatisfactorily to intensive treatment with sulfonamides orally and subcutaneously and with penicillin intramuscularly and by nebulization. There was a tendency for the pneumonitis to involve the same lung areas, especially the right upper lung fields. Because of the persistence of roentgenologic findings of interstitial pneumonitis, x-ray irradiation was given to the chest without noticeable effect. Exacerbations or recurrences of pneumonitis returned the patient to the hospital on subsequent occasions. Two bone marrow samples were negative for *Histoplasma capsulatum* by mouse inoculation. A tuberculin skin test in 1:000 dilution was negative. Hepatic and splenic enlargements, although presumably present at birth, were first noted on Feb. 16, 1946, were later demonstrated roentgenologically, and were outstanding findings at every examination. Blood Wassermann reactions on both the patient and her mother were negative. Rh types were not determined. Nucleated red cells were absent from all blood smears. A blood culture was negative. Punch biopsies of the liver and spleen were considered but were not done. Fever was usually absent except during exacerbations or recurrences of the pneumonitis. However, when present, it was low-grade in type with occasional peaks to 103 and 104 F.

Lumbar kyphosis was first noted on May 27, 1946, and abnormalities of the second or third lumbar vertebrae were demonstrated roentgenologically. These abnormalities were believed to be congenital. Edema was present at birth and

was noted frequently thereafter, especially during exacerbations or recurrences of the pneumonitis. The swelling was usually in the face but occasionally it was generalized. Blindness was suspected at an early age because of nystagmoid movements of the eyeballs and the patient's inability to follow objects with her eyes. On June 11, 1946, spinal fluid findings were within normal limits. On June 14, an ophthalmologist made a diagnosis of bilateral hydrophthalmos. The fundi were not visualized. Retardation of growth and development was marked. She did not gain weight satisfactorily after the age of three months. Generalized hypotonia was evident at all times. She did not reach for objects, responded poorly to stimuli, seemed unaware of her surroundings, never sat up alone, never talked or attempted to roll over or crawl. Her facial expression with a large protruding tongue was idiotic. Evidences of healing rickets were noted roentgenologically and by blood chemical determination (see table 1). The diet prescribed was adequate at all times in all respects; however, her food intake was poor.

Cardiac enlargement was first noted roentgenologically on Oct. 28, 1946. Previous roentgenograms had revealed no abnormality. No physical findings were elicited at any time except finding of gross cardiac enlargement during the last few

weeks of her life. Anemia of moderate degree was present occasionally. Hemoglobin values ranged from 8.9 to 15 gm. per 100 cc. Erythrocyte counts ranged from 3.10 to 5.56 million per cu. mm. Several blood transfusions were given to correct the anemia. Slight leukocytosis accompanied most of the episodes of pneumonitis, and counts varied between 6,600 and 23,000 per cu. mm. Differential counts were usually within normal limits with a "shift to the left" concomitant with leukocytosis. Vacuolated leukocytes in the peripheral blood and bone marrow were noted on several occasions and were first described on Mar. 7, 1946. The vacuolated cells were monocytes, lymphocytes and polymorphonuclear leukocytes. The cytoplasm, rather than the nuclei of these cells, was vacuolated. Absence of osteolytic lesions was noted in several roentgenograms of the skull and long bones. Hematuria and proteinuria were present on several occasions. Several of the episodes of hematuria were probably due to sulfadiazine. A complete urologic examination on Apr. 20, 1946, revealed nothing of significance.

Her final admission to the hospital was on Jan. 19, 1947. She was desperately ill with an exacerbation of pneumonitis and had marked respiratory distress. She died on January 26 at the age of thirteen months and twenty-two days.

TABLE 1—BLOOD DETERMINATIONS—1946.

Date	2/25	3/5	3/7	3/11	3/19	3/20	3/22	4/12	4/22	6/11	6/12	7/12	10/30	Normal Values
NPN		34						28	28			35		25-40 mg./100 cc.
Creatinine			.98											½ mg./100 cc.
Total protein		5.4						7.0	4.6			6.9		5.5-6.9 gm./100 cc.
Fibrinogen		0.8						.4	1.2			0.3		0.1-0.4 gm./100 cc.
Albumin		2.8						2.6	2.3			2.8		4.2-5.2 gm./100 cc.
Globulin		1.8						4.0	1.1			3.8		0.9-2.0 gm./100 cc.
Cholesterol		119			147			137	92	194		167		150-230 mg./100 cc.
Total fat	602													530-850 mg./100 cc.
Calcium				10.7						10.7		9.3	11.5	10-12 mg./100 cc.
Phosphorus					6.5					6.1		6.2	6.1	5-7 mg./100 cc.
Phosphatase			60		74.8					95	94	53.8	17.5	10-25 J.K. units/100 cc.
Fasting blood sugar						*142	104							65-80 mg./100 cc.
Icterus index								4	2					4-6
Ascorbic acid											5.5			7-14 mg./100 cc.
Cephalin flocculation				trace						3+				Negative

*Adrenalin tolerance determined. Results: 20 min. 124 mg. sugar per 100 cc.

40 min. 138

60 min. No determination

90 min. 200

120 min. 147

Clinical Diagnosis

Niemann-Pick's disease.
Pneumonitis.
Myocardial hypertrophy.
Clubfoot.

Necropsy Findings

The body was that of a 13 month old female infant. There was little adipose tissue in the usual depots. The face, hands and lower extremities were edematous. A fine, miliary rash was noted on the skin of the upper thighs and shoulders. The abdomen was disproportionately large and protuberant. There was bilateral clubfoot. The periorbital tissues were extremely edematous and the eyeballs were quite tense. All the organs were larger and heavier than normal. The heart and liver were twice the normal weight. The heart was also dilated and the ventricular walls thickened, but there were no congenital deformities. The myocardial fibers contained numerous vacuoles. Lipoid material was demonstrated in these vacuoles by special stains. There were also foam cells in the perivascular spaces.

The liver presented a smooth, shiny capsule and was normal in contour and configuration. Most of the liver cells were vacuolated, and there were collections of foam cells in the portal spaces. The Kupffer cells were filled with lipoid material.

The spleen was twice its normal size. The sinusoids were filled with erythrocytes and were widely separated by large mononuclear cells with vacuolated cytoplasm. Similar infiltrations were seen in lymph nodes and bone marrow.

The kidneys were enlarged, pale, and showed numerous petechiae and striate ecchymoses. The glomerular tufts contained many foam cells; the tubular epithelium was extensively vacuolated. There were infiltrations of foam cells throughout the digestive tract collected in all layers of the gut. Nowhere were there localized masses large enough to be seen grossly.

The brain was slightly heavier than normal. Although its configuration was normal, the brain tissue was abnormally firm. Its surface was waxy and greasy in appearance. Microscopically there were collections of foam cells about the meningeal vessels and in the subarachnoid space. Neurons and glia cells were swollen and highly vacuolated. Giant degenerated forms, filled with lipoid material, were noted.

The lungs were greatly increased in weight. They were largely airless although small areas throughout both lungs were air-containing. Some of the alveoli were filled with acute inflammatory exudate. Similar material was seen in the bronchioles and bronchi. Many alveoli were filled

with large collections of foam cells which also occurred in the interalveolar septa. Some were giant forms around and in these areas of infiltration. The pleura of the right lung was covered by granulation and fibrous tissue.

The analysis of liver tissue was as follows:

Weight (gm)	% wet wt.	% dry wt.	Normal values
Total fat	6.10	2.58	12.9
Cholesterol	0.82	0.35	1.8
Lipid phosphorus...	.70	0.73	3.6
Lecithin (calc)	4.25	1.81	9.1
Sphingomyelin	1.16	0.49	2.5
			3.26% wet wt.
			0.31% wet wt.
			0.39% wet wt.
			4.81% wet wt.
			0.38% wet wt.

Necropsy Diagnosis

Niemann-Pick's disease.
Pneumonitis, chronic, severe with bilateral acute lobular pneumonia.
Anasarca, mild.
Myocardial hypertrophy and cardiac dilatation.
Pleural adhesions, old, right.
Clubfoot, bilateral.

Clinical Discussion

Dr. P. C. Jeans (Pediatrics): The baby came to us at the age of two and one-half months by way of the orthopedic service. She was brought there first because of clubfeet. Immediately it was discovered that pneumonia was present, and the baby was transferred to pediatrics. In the preceding history, it was found that the baby had led a relatively normal existence up to that time. At the time of birth there was a brief period of cyanosis and a little edema of the face. Both of these disappeared fairly promptly. Then at three weeks of age, there was a period during which the baby had a cold and otitis media. The weight gain continued and apparently the baby was in good health up to the time she came to the hospital. The attack of pneumonia that the baby had when she first came to us responded rather satisfactorily to treatment, and there seemed to be more or less complete recovery. However, as time passed the pneumonia recurred over and over again and the baby was re-admitted to the hospital nine times. As the condition progressed or

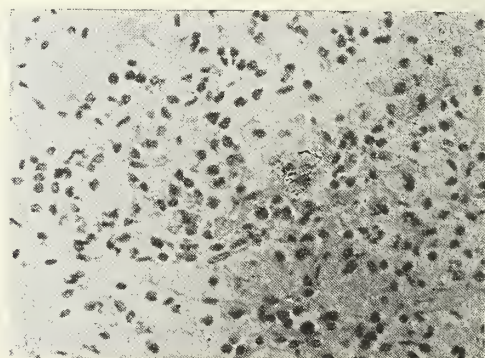


Fig. 1. Foam cells in alveoli.

as it recurred over and over again, there was less satisfactory response to treatment. At the very first examination and at all subsequent examinations, the liver and spleen were found to be very much enlarged. There were occasions when the baby developed moderate edema of the face. This was most often in relation to the attacks of pneumonia. It is not clear just why edema should occur. The only finding that seems to be related in any way is a low blood albumin, but it is really not low enough for us to expect it to produce edema. At the time of admission the question arose as to the presence of healing rickets. I think the evidences for rickets are rather equivocal. At any rate if the baby had had rickets, it was healed at the time it came here. The baby did have high levels of phosphatase in the blood, but the values for calcium and phosphorus were normal at all times that we determined them. High phosphatase can be a result of liver damage, and this baby did have a very large liver.

The baby gained satisfactorily in weight up to about three months, but from then on she failed to gain. Her height progressed in a rather satisfactory manner. There developed increasing evidence of mental retardation. From time to time it was found that she had moderate anemia and transfusions were given to correct it. In various examinations it was found that the white blood cells of both the bone marrow and of the blood were vacuolated and often in a fairly high proportion. On one occasion, I believe, up to 15 per cent of these cells were vacuolated. The blood lipid levels were all within normal limits, at least those that were determined. It was not until the baby was ten months of age that it was noticed that the heart was enlarged, and apparently it remained enlarged from then on until her death at thirteen months of age, but without any clinical signs accompanying this enlargement.

There were various diagnoses considered during the several times that the baby was in the hospital. One of them was Von Gierke's disease. This may occur early in life and may give rise to enlargement of the liver. However, she had a fairly good response to adrenalin injection as far as blood sugar level was concerned and glycogen disease seemed fairly unlikely for this reason. It was thought that there might be fibrocystic disease of the pancreas. This possibility was suggested by the radiologist's report. No examination was made for the presence of enzyme in the intestinal tract to exclude this diagnosis. We know that ordinarily enlargement of the liver and spleen are not a part of fibrocystic disease and that when fibrocystic disease is present almost

always one finds gastro-intestinal disturbance with loose stools with excess of fat in the stool. These were not present so that diagnosis seemed to be excluded on the clinical basis. Histoplasmosis was considered and cultures were made. These cultures were negative. Leukemia was thought of as a possibility when the blood smears and marrow smears were studied, but at no time was there any real evidence of leukemia present.

The diagnosis of Letterer Siwe's disease was considered rather strongly. This disease occurs in young babies so the age was satisfactory. In this disease the liver and spleen are enlarged as was the case in this baby. However, in Letterer Siwe's disease there is no lipid storage, and one does not find foam cells. That condition seemed to be excluded on that basis. Because of the vacuoles in the white cells, lipid dystrophy was considered

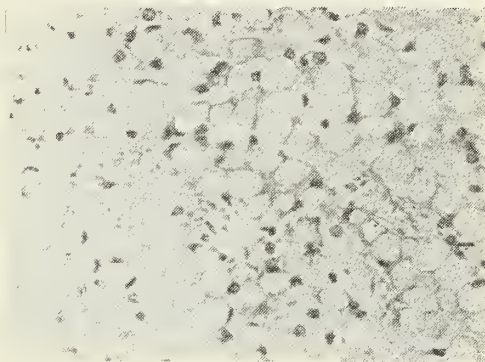


Fig. 2. Liver: extreme fatty metamorphosis.

as a possible diagnosis. Of the lipid dystrophies that have enlarged spleen and liver, we think of two, Gaucher's disease and Niemann-Pick's disease. In Gaucher's disease the blood lipids always are normal so far as I know, and they were normal in this case. However, in Gaucher's disease there are neurologic changes expected that were not present here. This baby did have neurologic changes and mental deterioration, but the changes were not of the type that one expects in the acute Gaucher's disease of infancy with spasticity and loss of upper motor neuron control. In Gaucher's disease one does not find white cells with fat in them as in this case. In Niemann-Pick's disease one does find foam cells. In this disease the blood lipids may be increased, but not necessarily, and they were not increased in this case.

Going through this list then of possible diagnoses, we come down to Niemann-Pick's disease as being the most likely because of the age, the course and the finding of fat in the white cells. It is to be pointed out that this baby was not Jewish. It is most common to find this condition

among the Jewish people. However, it was a female baby, and the disease occurs most commonly in female babies.

Dr. Eugene F. Van Epps (Radiology): This film is just one of many taken over a period of about nine months during the lifetime of this child. The reason this one was taken is because it shows several of the characteristics that I would like to discuss this afternoon. One sees in the apex of the right lung an area of increased density which has all the characteristics of pneumonia. One is able to see streaky and nodular increases in density extending from the hila going down toward both bases and particularly up into the right apex. I would like to state here that whereas this child had had several attacks of acute pneumonia, which responded to the usual therapeutic methods in use at this time, that in between these attacks of pneumonia there was a persistent streaky increase in density going out from both hilar regions into the apices and into the bases.

In other words here was a chronic process present in this child's lung over a period of at least nine months of which we had definite x-ray proof. When we see that sort of thing in a child, a young child, who does not have any of the acute diseases such as whooping cough, influenza and measles, we expect then some other cause for that. I would like to make it very clear at the outset that this is not characteristic of any certain disease process. When we see that sort of thing in a child who is under two years of age, we think particularly of a fibrocystic disease of the pancreas. It is a condition in which the individual becomes susceptible to respiratory infections.

In the absence of fibrocystic disease of the pancreas, we then have to consider another possibility and that is the lipoid granulomatosis or reticulo-endotheliosis. In a child of two years of age and under, one thinks particularly of Letterer Siwe's disease, a non-lipoid reticulo-endotheliosis. It involves the lungs and is indistinguishable from an interstitial bronchopneumonia such as this child shows. Radiographically Hand-Schüller-Christian's disease cannot be differentiated from Letterer Siwe's disease. In Niemann-Pick's disease there is somewhat of a difference in that there is the appearance by x-ray of a lobular or bronchial pneumonia. So in order to summarize, we have a child who, over a period of many months, has shown a chronic respiratory infection with acute exacerbations for which we have the findings demonstrated. We have to exclude fibrocystic disease of the pancreas; we

have to exclude the lipoid reticulo-endotheliosis and the non-lipoid reticulo-endotheliosis. We are unable to do so radiographically. I would like to show the next slide which is a picture of a child who exhibits the characteristics that we see in Hand-Schüller-Christian's disease. He exhibits in his chest the very streaky nodular increases in density throughout both lung fields extending

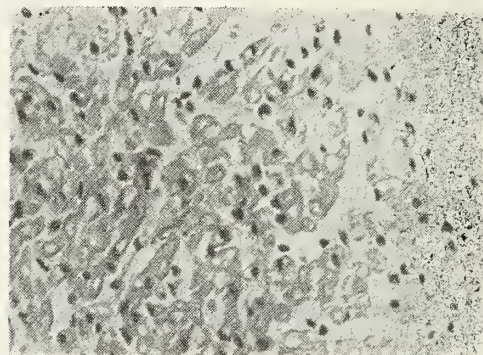


Fig. 3. Myocardium lipid vacuoles in muscle fibers.

from the hilum on both sides. They may or may not have glandular enlargement with this condition. In Niemann-Pick's disease usually there is not any enlargement of the lymph nodes in the hilum.

Now as far as x-ray is concerned, we can only describe the increases in density, such as we see here; and if the history of the patient is such that he is not in an acute respiratory infection, then we must think of those disease processes that I just mentioned. If he is in an acute respiratory infection, then we have to feel that all of these changes could be based upon acute infection. Without an adequate history on these individuals, we are at somewhat of a loss to adequately explain all the clinical findings by just looking at one or two films. In other words an interstitial or peribronchiolar pneumonitis can be present on an acute basis due to measles, whooping cough, influenza, etc., or even to a pneumococcus, or it may be due to conditions unrelated to the respiratory system such as in reticulo-endotheliosis, or it may be secondary to fibrocystic disease of the pancreas.

Dr. E. D. Warner (Pathology): I would like to ask Dr. Van Epps how this x-ray picture differed from that of chronic lipoid pneumonia resulting from aspiration of lipoid material.

Dr. Van Epps: The findings in the lung radiographically in lipoid pneumonia are usually those of a diffuse involvement of a lobe or perhaps several lobes without any nodular enlargement of the regional lymph nodes unless secondary infection

supervenes. In other words, a diffuse homogeneous increase in density may appear particularly in the bases of the lung of these young children who have aspirated milk; or it may be a lobular type of pneumonia in contradistinction to the linear and streaky increases in density.

Dr. Warner: Anatomically this is a case that fits into the lipid storage diseases and approaches the ultimate in the deposition of this lipid material. There is extensive involvement in the reticulo-endothelial system and in addition almost all the parenchymatous tissue: the muscle, the liver cells, the renal tubular epithelium and the thyroid epithelium. One feature about this that particularly interested me in connection with the liver was that despite its microscopic appearance, in which it looked more like adipose tissue than it does like liver, its gross appearance was not greatly abnormal. It was twice the normal size which would lead you to anticipate a tremendous increase in bulk due to accumulated lipoids. As I interpret the figures on the fat analysis in this case, the total fat content of this liver was actually less than normal, which is rather surprising to me. The total fat content was in the neighborhood of only two-thirds of normal despite its extreme fatty appearance. This is not largely neutral fat but the more complex lipid, and I do not know whether that is the characteristic of this disease or not. Could you answer that Dr. Stearns?

Dr. Genevieve Stearns (Pediatrics): I think it is not characteristic of the disease.

Dr. Warner: In Niemann-Pick's disease is this typical that the total fat is reduced?

Dr. Stearns: Usually not.

Dr. Warner: Is it appreciably increased ordinarily?

Dr. Stearns: No, it is not.

Dr. Carroll Martin (Internal Medicine): Was the cerebroside causing this lipid dystrophy identified?

Dr. Warner: It was largely sphingomyelin, lecithin, and lipid phosphorus according to the analysis. The total fat was less than normal, about two-thirds of normal. The cholesterol was about normal. The lipid phosphorus was about nine times normal. The lecithin was about two times normal and the sphingomyelin was about six times normal so that this fits chemically into the phospholipid or Neimann-Pick's type of lipid storage disease rather than the Gaucher or cholesterol type.

Dr. Stearns: The total fat was very troublesome

to us. There are very few data reported in the literature which are comparable to modern methods of analyses, and the best data we could find for normal values were reported on wet weight of the liver for total fat and cholesterol and for the dry weight of the liver for the other things. And as you noticed the lecithin and the sphingomyelin were a very high percentage of the dry weight. Whether there was an increased amount of water in that liver tissue also which made the apparent discrepancy in the total fat values I couldn't say. The lecithin and the sphingomyelin are the important things from the standpoint of the reticulo-endotheliosis. The baby's total blood fats were never above the normal range in the times they were done. That is not unusual in this disease.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Executive Council

October 8, 1947

The Executive Council of the Iowa State Medical Society met at Hotel Fort Des Moines in Des Moines Wednesday evening, October 8, with the following persons present: H. A. Spilman, J. E. Reeder, J. A. Downing, J. I. Marker, L. R. Woodward, W. A. Sternberg, C. H. Cretzmeyer, J. B. Knipe, R. N. Larimer, E. F. Beeh, H. A. Housholder, C. A. Boice, R. C. Gutch, J. G. Macrae and W. S. Reiley of the Executive Council; Martin I. Olsen and G. M. Crabb of Iowa Medical Service; Fred Sternagel of the Committee on Medical Service and Public Relations; Everett M. George, editor; and George Scanlon of the Committee on Medical Education and Hospitals.

Dr. Scanlon reported on further developments at the College of Medicine and these were discussed by all present, and a committee appointed to formulate a letter to be sent to the Board of Education and the officers of the University. This committee reported back to the Executive Council Thursday morning and its letter was approved. A request of the Tuberculosis Committee for more beds in thoracic surgery at the University Hospitals was also approved.

Dr. Olsen and Dr. Crabb presented facts and figures on Iowa Medical Service and the Council approved widening the scope of its service to subscribers, the details to be worked out by the officers of Iowa Medical Service.

Meeting of the Board of Trustees

October 8, 1947

The Board of Trustees met following the Executive Council meeting; minutes were read and approved; routine bills were authorized; and special authorizations for travel to medical meetings were voted. Meeting adjourned at 11:15 p. m.

STATE DEPARTMENT OF HEALTH



The Status of Vaccination Against Influenza

A preliminary report by Francis and associates¹ of the Department of Epidemiology and Virus Laboratory, School of Public Health of the University of Michigan, presents an explanation for the conflicting results following the use of influenza vaccine during the outbreak of influenza in March of this year.

At the University of Michigan students totaling 10,328 were immunized with Influenza A and B vaccine between Oct. 22 and Nov. 2, 1946. "Individuals (a small number), with marked sensitivity to eggs were excluded. No anaphylactic or other allergic reactions were observed, and according to the records of the Health Service the number of individuals with systemic complaints was less than 1 per cent." At the same time, 7,615 persons in the same environment did not receive the vaccine.

Early in March, 1947, an epidemic of influenza developed in Michigan. Among 10,328 persons who had been vaccinated, 743 (7.19 per cent) came down with influenza. Of 7,615 unvaccinated people, 616 or 8.09 per cent suffered an attack of this disease. It is evident from these figures that there was no difference in the prevalence of influenza among vaccinated and unvaccinated individuals.

An Atypical Strain of Influenza A Virus Isolated

Great difficulty was experienced in Michigan in isolating virus from the throat washings of patients. Twenty-one specimens from that many influenza patients were inoculated into chick embryos, all with failure to recover virus. Three out of seven specimens of throat washings were inoculated into ferrets, finally yielding an atypical strain of Type A influenza virus. The report states: "The difficulty in establishing virus in eggs is quite different from our previous experience with Influenza A. . . . Laboratory studies with the new strain of virus (that causing the epidemic in March, 1947) showed little or slight antibody production to this strain.

Reason for Apparent Failure of Vaccine

"In view of the laboratory studies indicating that the antibody titer for the new strain was essentially the same in vaccinated and unvaccinated persons, it is not surprising that the amount of illness was practically the same. Since the antibody titers to the strains of virus in the vaccine were high in the vaccinated individuals who became ill, it seems unlikely that the ineffectiveness of the vaccine in the prevention of influenza in this instance was related to the interval of time between vaccination and the appearance of the outbreak.

"All the data point to the probability that the antigenic deviation of the virus encountered is the responsible factor. This is further supported by the evidence obtained with ferret sera. . . . Thus the absence of effect of vaccination during the outbreak of influenza in the spring of 1947 appears to be due to the lack of sufficient antigenic crossing between the strains of virus in the vaccine and the prevalent strain responsible for the epidemic. The implications of this and other observations will be discussed in a more detailed report to be published."

Experiences With Influenza Vaccine

As part of a symposium presented at the seventy-fifth annual meeting of the American Public Health Association in Atlantic City on Oct. 9, 1947, Thomas Francis, Jr. (of the Department of Epidemiology and the Virus Laboratory, University of Michigan School of Public Health) summarized results from the use of influenza vaccine as obtained by the Influenza Commission and by other investigators. In recent years two broad types of influenza virus have been isolated from throat washings of patients during epidemics, namely Types A and B.

During 1943 as reported by Francis, influenza vaccine Types A and B was administered to a group of 6,200 persons, a similar group of unvaccinated individuals in the same environment serving as controls. An outbreak of influenza occurred: The incidence of influenza was 2.2 per

cent in the vaccinated and 7.2 per cent in the control group, or a ratio of 4:1 in favor of those immunized.

In the autumn of 1945 an epidemic of influenza (Type B) occurred after 600 members of army units at the University of Michigan had received influenza vaccine. The incidence of influenza among vaccinated persons was 1.1 per cent compared with 9.9 per cent among the unvaccinated.

In a similar study at Yale University, the incidence among the vaccinated was 0.5 and in the unvaccinated 12.5, a ratio of about 12 to 1 in favor of those who had received immunizing treatment.

The data as submitted by Francis indicate that although failure was experienced in the spring of 1947 due to influenza caused by an atypical strain of Type A virus, a very significant degree of protection is conferred against the ordinary types of A and B virus.

REFERENCE

1. Francis, Thomas, Jr.; Salk, Jonas E.; and Quilligen, J. J., Jr.: Experience with vaccination against influenza in spring of 1947; preliminary report. *Am. J. Pub. Health*, xxxvii:1013-1016 (August) 1947.

Communicable Disease Summary for the
United States Released by the U. S.
Public Health Service

The following paragraphs with reference to the reported incidence of poliomyelitis, influenza and other communicable diseases are part of a report prepared by the Division of Public Health Methods of the United States Public Health Service for the week ending Oct. 4, 1947.

Poliomyelitis

The reported incidence for the country as a whole declined for the third consecutive week—613 cases were reported currently, as compared with 801 last week, 881 for the next earlier week, and 959 for the third preceding week (the peak week of reported cases this year, week ended September 13). Decreases occurred in all states which have been reporting the highest numerical incidence; but increases were recorded in Connecticut (2 to 15), Maryland (8 to 12) and in North Carolina (18 to 23). In Idaho, where an outbreak was recently reported in the town of Caldwell, Canyon County, 17 cases were reported as compared with 16 last week (previously erroneously reported as 26 cases). To date, 7,912 cases have been reported for the country as a whole, which is below the corresponding figure for each of the preceding four years but above that for 1942 (3,024 cases).

Influenza

There are no indications to date of epidemic occurrence, though Texas reported 646 cases of the weekly total of 1,171, the latter figure being slightly above the five year median (1,098) for the week, but below the corresponding week last year (1,221). The total since the average seasonal low week of the disease (week ended between July 25 and August 1) is 6,575, as compared with 6,868 last year, which was the five year median.

Other Communicable Diseases

One case of smallpox was reported (in North Dakota) and 1 case of psittacosis (in California); 169 cases of undulant fever were reported (32 in Iowa, 15 in Connecticut, 14 in Illinois, and 10 in California), bringing the total to date to 4,860, as compared with 3,948 for the same period last year. The other important communicable diseases are approximately at or below their median expectancies, except tularemia (1,151; last year, 734) and whooping cough (124,335; last year, 77,464).

Cholera in Egypt

A severe outbreak of cholera was reported in Egypt the latter part of September, and 1,348 cases, with 334 deaths, had been reported up to October 6. This is the first reported occurrence of the disease in Egypt since 1903, and the first major epidemic in that country since 1902.

Poliomyelitis in Iowa

Twelve cases were reported for the week ended Oct. 11, 1947, compared with 39 cases for the same week in 1946.

Reported cases of this disease as notified to the State Department of Health thus far in 1947 totaled 141 (through October 15) compared with 475 cases for the corresponding period of 1946 (through October 12).

MORBIDITY REPORT

Disease	Sept. '47	Aug. '47	Sept. '46	Most Cases Reported From
Diphtheria ..	7	4	8	Polk (3), scattered
Scarlet Fever ..	13	48	53	Marshall, Polk, scattered
Typhoid Fever ..	5	8	3	Appanoose, Blackhawk, Davis, Plymouth, Story
Smallpox ...	0	0	0	.....
Measles 22	84	26		Adair, Des Moines, Scott, Winneshiek
Whooping Cough 68	176	89		Dubuque, Lee, Linn
Brucellosis .. 101	140	9		Blackhawk, Sioux, Wright
Chickenpox .. 4	12	17		.....
German Measles ... 1	2	0		Cedar
Influenza ... 0	0	0		.....
Malaria 3	2	8		Polk (2), Johnson (1)
Meningitis .. 3	1	5		Marshall, Sac
Mumps 8	9	18		Linn, Woodbury
Pneumonia ... 2	0	485		.....
Poliomyelitis .. 39	48	132		Jones, Woodbury, scattered
Tuberculosis .. 56	46	95		For the State
Gonorrhea ... 143	160	180		For the State
Syphilis 189	318	138		For the State

The JOURNAL of the Iowa State Medical Society

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Vol. XXXVII NOVEMBER, 1947 No. 11

Report of First State Meeting on Medical Service and Public Relations

To those prejudiced persons who planned it, the first state meeting on medical service and public relations seemed very successful. Even to those who were not responsible for it, it must have appeared worth-while judging from the interest and close attention displayed. There were representatives from 46 different counties, and about ten members of the Woman's Auxiliary making a total of 117 persons attending the luncheon.

An interesting feature was the interest with which the guest speakers listened to the other presentations. Each man seemed most anxious to hear what the other speakers had to say. The guests commented on the wide range of subject material covered and were enthusiastic about the possibilities of such a state meeting.

The round-table discussions in the afternoon were well attended and offered the official representatives an opportunity to ask questions from men who should know the answers.

It was the hope of the sponsors that the representative would go back home and tell his fellow doctors what he had learned. He was asked to serve first as the earpiece of his county society in absorbing the information, then as the mouthpiece of the committee in disseminating it to other doctors.

Dr. Spilman and Dr. Sternagel emphasized this wish in their opening remarks. Dr. F. I. Fitzsimons of St. Paul discussed the home town medi-

cal care program for veterans, and he was followed by Mr. P. F. Hopkins and Mr. H. H. Hauge of the Board of Control who discussed the mental hospital situation in Iowa. Mr. Hopkins told of what was contemplated, and Mr. Hauge spoke of legal phases of the new law.

Dr. Shaw presented a picture of rural health in Iowa, listing the physician-patient ratio in general and the outlook for improvement.

Mr. T. A. Hendricks of the Council on Medical Service of the American Medical Association gave suggestions for Iowa's public relations program; Mr. Verne Pangborn, director of the hospital program in Iowa, discussed the hospital construction outlook; and Mr. Frank E. Smith, director of Associated Medical Care Plans, spoke of medical service plans in the United States and the need for doctor participation.

At the luncheon Dr. F. L. Feierabend of Kansas City gave a most scholarly talk on social responsibilities.

Mr. John Henry of the *Register* and *Tribune* was unable to present his paper on public relations; Dr. Ruth Nayfield's paper on the doctor's part in vocational rehabilitation was given by Mr. Howard Benshoof, director of the Vocational Rehabilitation Division; and Dr. Robert C. McElvain of St. Louis closed the formal program with a discussion of the aims of the American Academy of General Practice.

The National Blood Program of the American Red Cross

Crystallizing eleven years of assistance in obtaining needed blood for medical use, the American Red Cross has launched the New National Blood Program. Its purpose is to provide for medical use, without charge for the products, whole blood and its derivatives in sufficient quantities to help save lives and prevent needless suffering.

Prior to its adoption in June, 1947, the program was discussed with and approved in principle by officials of the American Medical Association, American Hospital Association, Veterans Administration, Army, Navy, United States Public Health Service, the American Public Health Association, and others in medical and scientific fields.

Several factors determined the decision to begin such an undertaking. Primarily, recent advances in medical knowledge derived from research indicate the necessity for a wider use of blood and blood products in medicine, surgery, and disease prevention. The supply of war surplus materials will probably be exhausted by July 1, 1948.

and to date no adequate provisions have been made nationally to insure continuing supplies. Since there is no satisfactory substitute, human blood must be obtained; conservative estimates indicate that about one person in every thirty-five in the United States would have to give blood each year to supply the needs of the country. Experience has shown that the cost of blood and those derivatives available commercially is greater than most families can afford to pay. Furthermore, it has become generally recognized that the Red Cross is the organization best suited to carry out a national blood program because of its accomplishment of large-scale blood collection during World War II.

Four distinct phases are involved in supplying blood and its products for medical use. They are: (1) collecting blood; (2) processing it for use as whole blood and blood derivatives, including packing and storage; (3) distribution of both the blood and the blood products for use by physicians and hospitals for any patients needing them; (4) continuous research and investigation of the quality of the products, their safety and important uses.

It is estimated that a program of such magnitude will require three to five years to reach full operation. The first year may result in the establishment of not more than twenty or twenty-five centers, all carefully selected according to the advantages they offer in the early stages. Red Cross chapters will have the responsibility for conducting the program within their own communities.

Some of the derivatives will be: (1) serum albumin, used for shock and certain kidney diseases and other conditions; (2) immune serum globulin for modification or prevention of measles; (3) antihemophilic globulin effective in the treatment of hemophiliacs; (4) blood grouping serum for determining blood types; (5) fibrin films and thrombin used in neurosurgery; (6) red cell suspensions for treating certain anemic conditions; and (7) red cell paste and powder to promote the healing of certain wounds.

Blood and its products furnished through the National Blood Program will be provided without charge to patients, physicians and hospitals. The only charge ever made to the patient will be that for professional services in administering the material. It is hoped that communities that have been planning or considering the establishment of local blood programs with Red Cross assistance will proceed with their plans, for these can be integrated with the national program.

Herniation of Cervical Disks

Frykholm has recently presented some interesting findings regarding the causation of nerve root pain.¹ For the past ten years it has become apparent that most cases of sciatica are due to some type of nerve root compression, usually the result of the herniation of a lumbar intervertebral disk. During this period interest was aroused in similar problems relating to the intervertebral disks of the lower cervical spine.

It has been established that a lateral rupture of a disk in this region may produce a compression of the corresponding nerve root in the intervertebral foramen only, without implication of the cord, thus giving rise to the clinical picture of brachial neuralgia. The isolated involvement of one of the three lowest cervical nerve roots produces an individual clear-cut clinical symptomatology, which enables the surgeon to make a rather accurate preoperative diagnosis as to the level at which the pathologic lesion is to be sought.

The disks in the cervical region protrude in a dorsal and lateral direction and have a great tendency towards calcification. Simultaneously osteophytes grow out from the edges of the adjoining vertebrae. As a result of the pathologic process the intervertebral foramen is transformed into a narrow osseous canal. The dorsal wall of this canal is formed by the most lateral part of the lamina plus the articular facets, while the ventral wall is formed by the protruded, calcified part of the disk. Consequently, it is more adequate, in pathologic cases, to speak of an intervertebral canal instead of an intervertebral foramen. The nerve becomes very tightly fixed in this canal with the result that any small disruption within the protruded calcified mass or minimal edema of the nerve will produce acute signs and symptoms of nerve-root compression.

In the lower cervical region the spinal nerves issue from the cord at a considerably higher level than that of the intervertebral foramen through which they have to pass. The dural sheaths emerge from the spinal dura at right angles. Therefore the spinal nerves would be rather sharply angulated at their points of exit through the sheaths, were it not for the role played by the dural pouches. These are funnel-shaped lateral extensions of the spinal dural cavity from the bottoms of which the dural sheaths emerge. This arrangement guarantees an arched course for the spinal nerves, thus preventing their angulation. In the bottom of the dural pouch each

1. Frykholm, R.: Deformities of dural pouches and strictures of dural sheaths in the cervical region producing nerve-root compression. *J. Neurosurg.*, iv:403-413 (September) 1947.

nerve root enters an individual dural sheath, the two ostea of which are separated by a distinct interradicular septum. In this septum the two adjoining dural sheaths are fused, but more laterally they are separated by the interradicular foramen.

The dorsal dural sheath has a variable extension. Sometimes part of the dorsal root ganglion is included in the sheath, but usually it extends only to the medial part of this ganglion. The ventral sheath is patent further laterally, as a rule, to the point where ventral and dorsal roots fuse to form the mixed spinal nerve. The arachnoid encloses each nerve root individually at its exit and extends for a certain distance into the dural sheath. A small arterial branch from the vertebral artery pierces the lateral part of each dural sheath and follows the nerve root to the cord. If a number of nerve roots are compressed, the arterial supply to the corresponding segments of the cord might be impaired.

The anatomy of the structures surrounding the spinal nerves in the lower cervical region is subject to a certain amount of variation. Therefore, it is difficult clearly to define the borderline between what is to be regarded as a mere anomaly and what is to be looked upon as definitely pathologic. But when conditions are changed in such a direction that an undue strain is put on a nerve, and these facts coincide with clinical manifestations of nerve involvement which are alleviated by restoration of normal conditions, the deformity in question must be regarded as pathologic.

Obviously the dural pouches play an important role in the mechanics of the cervical spine. If the spine is bent forward, the nerve roots become stretched, a fact which is easily verified during an operative exposure or by studying a postmortem specimen. The role played by the dural pouches is to prevent the spinal nerves from becoming sharply angulated. In the absence of an ordinary dural pouch such an angulation must take place.

In the surgical treatment of sciatica most operators account for about 12 per cent of "negative explorations" in the lumbar region. If attention is directed towards the possibility of pathologic lesions within the dural sheaths as well as outside them, this figure will probably be reduced.

AMCP Meeting

The second annual meeting of American Medical Care Plans (AMCP) was held in St. Louis, Mo., September 20 and 21, with the majority of the medical care plans represented. Only non-profit, medically sponsored, prepayment plans are

eligible for membership in this organization which is headquartered and sponsored by the American Medical Association in its Chicago office. Iowa Medical Service is a charter member of AMCP, which now has nearly sixty member plans scattered throughout the United States, Canada, and Hawaii.

AMCP was organized to correlate the activities of all nonprofit prepaid medical care plans at the national level to conduct national advertising, standardize administrative procedures for more efficient operation, consolidate statistical data for research and future planning, establish and assist Home Care for Veterans Programs in various states, etc. To accomplish this task, national committees were formed recently to make exhaustive studies of problems in this field of medical economics, with the request that recommendations be presented for consideration of members at the St. Louis meeting.

Member plans approved these committee reports which will result in the accumulation of valuable information not now available for the betterment of medical care plans throughout the nation. The growth of prepaid medical care is phenomenal and corresponds with early Blue Cross history in its first decade of operation. In 1938 only three medical plans were in operation as compared with over seventy today, with a combined membership of nearly 7,000,000 persons. When one considers this total, with a Blue Cross membership of more than 28,000,000 people, it is apparent the people of this country are demanding the security of a more complete health program on a community nonprofit basis. AMCP is a vital factor in fulfilling this need in America.

Mid-Year Report of Hospital Service, Inc., of Iowa

The 1947 mid-year report of Hospital Service, Inc., of Iowa which was recently published indicates an ever increasing membership that now totals 395,224, or one out of every five persons in the area covered. The growth during the first six months of 1947 alone was approximately 52,000; the rural membership numbers 100,000.

Throughout the nation there are 88 Blue Cross plans, of which Hospital Service, Inc., of Iowa is one. Their membership as of June 30, 1947, was 28,330,166, or more than 20 per cent of the United States' population. During the first six months of this year, 24,427 cases used 169,795 days' hospital care for which Blue Cross allowed \$1,511,692.56. The average stay was 6.95 days, the average hospital charge per day was \$10.83,

(Continued on page 524)

SPEAKERS BUREAU

HERMAN J. SMITH, M.D., Des Moines, *Chairman*

ROBERT N. LARIMER, M.D., Sioux City

HORACE M. KORNS, M.D., Dubuque

BEN F. WOLVERTON, M.D., Cedar Rapids

L. C. HICKERSON, M.D., Brooklyn

SPEAKERS BUREAU ACTIVITIES

Three cancer institutes have been scheduled for November. Complete programs are listed below.

CANCER INSTITUTE—FORT DODGE

Tuesday, Nov. 4, 1947

Hotel Wahkonsa

M. W. Burleson, M.D., Fort Dodge, Chairman

- 2:00 p. m. Carcinoma of the Head and Neck
John B. Erich, M.D., Rochester, Section of Laryngology, Oral and Plastic Surgery, Mayo Clinic
- 3:00 p. m. Carcinoma of the Genito-urinary System
Laurence F. Greene, M.D., Rochester, Section on Urology, Mayo Clinic
- 4:00 p. m. Carcinoma of the Uterus
John H. Randall, M.D., Iowa City, Department of Obstetrics and Gynecology, University Hospitals
- 6:00 p. m. Complimentary dinner
- 7:30 p. m. Carcinoma of the Gastro-intestinal Tract
J. Dewey Bisgard, M.D., Omaha
- 8:30 p. m. Carcinoma of the Breast
R. T. Tidrick, M.D., Iowa City, Department of Surgery, University Hospitals

CANCER INSTITUTE—DUBUQUE

Thursday, Nov. 6, 1947

Mercy Hospital

D. F. Ward, M.D., Dubuque, Chairman

- 4:00 p. m. Carcinoma of the Uterus
Speaker not yet scheduled
- 5:00 p. m. Carcinoma of the Stomach
Erwin R. Schmidt, M.D., Madison, University of Wisconsin Medical School
- 6:30 p. m. Complimentary dinner
- 7:30 p. m. Carcinoma of the Bladder, Kidney and Prostate
Speaker not yet scheduled
- 8:30 p. m. Carcinoma of the Lung
Robert A. Dorner, M.D., Iowa City, Department of Surgery, University Hospitals

CANCER INSTITUTE—MASON CITY

Tuesday, Nov. 11, 1947

Hotel Hanford—Pine Room (Lectures)

J. W. Lannon, M.D., Mason City, Chairman

- 4:00 p. m. Carcinoma of the Uterus
John L. McKelvey, M.D., Minneapolis, Head, Obstetrics and Gynecology,

University of Minnesota Medical School

- 5:00 p. m. Carcinoma of the Skin
Robert L. Barton, M.D., Dubuque
- 6:30 p. m. Dinner—Wedgewood Room
- 7:30 p. m. Carcinoma of the Stomach
Carl G. Morlock, M.D., Rochester, Mayo Clinic
- 8:30 p. m. Radioactive Isotopes
Speaker not yet scheduled

The Sac City postgraduate course has already started and only the remaining lectures are listed. The Fort Dodge course, which starts November 6, is shown in its entirety.

POSTGRADUATE COURSE—FORT DODGE

Hotel Wahkonsa

Dinner, 6:00 p. m.—Lecture, 8:00 p. m.

E. F. Beeh, M.D., Fort Dodge, Chairman

- Nov. 6 Infant Nutrition
J. D. Boyd, M.D., Iowa City, Professor of Pediatrics, Children's Hospital, University Hospitals
- Nov. 13 Common Rectal Problems
Raymond J. Jackman, M.D., Rochester, Section of Proctology, Mayo Clinic
- Nov. 20 Office Urology for the General Practitioner
Harry C. Rolnick, M.D., Chicago
- Dec. 4 Common Fractures and Their Treatment
Herman F. Johnson, M.D., Omaha
- Dec. 11 Common Gynecologic Problems
Fred H. Falls, M.D., Chicago, Department of Obstetrics and Gynecology

POSTGRADUATE COURSE—SAC CITY

Park Hotel

Dinner, 6:30 p. m.—Lecture, 8:00 p. m.

C. D. Gibson, M.D., Sac City, Chairman

- Nov. 20 New Therapeutic Agents
E. L. DeGowin, M.D., Iowa City, Department of Internal Medicine
- Dec. 4 Diagnosis and Management of Arthritis
Charles H. Slocum, M.D., Rochester, Mayo Clinic

NEWS NOTES

from the

Committee on Medical Service and Public Relations

Problems of Medical Service in Iowa

There are several factors influencing medical supply in Iowa which are being studied by the Committee on Rural Health Problems. Iowa had approximately 2,500 physicians practicing in the state. This averages about one doctor to each 1,000 of population, which is not far below the ideal concentration. However, the distribution is far from being perfect. In 1947, according to a recent report issued by the Bureau of Information of the American Medical Association, there were thirty-two counties which had less than 1,000 people per physician. These counties could certainly be considered as being quite adequately served. The same survey shows that forty-three counties had from 1,000 to 1,499 people per physician, which is definitely more than can be well cared for, especially in times of epidemic or unusual incidence of disease. There were twenty-five counties which had over 1,500 people per physician, and these are badly in need of more doctors.

Fifteen counties and about forty towns had requested more general practitioners. Most of the towns were below 700 in population and were from ten to twenty miles from the nearest doctor. If these towns are also in a county which has a low ratio of physician to population, they are then in bad straits. It is doubtful, with the general changes which have developed, whether these smaller towns will ever again have a resident physician. With the improvement of roads and the universal use of the automobile, the factor of distance, within limits, has been eliminated from the problem of the location of physicians. The sick individual can be taken ten or twenty miles to a doctor's office or a hospital so easily that it does not seem necessary, as it did years ago, that there be a doctor within five miles in order for the patients to secure medical care. The costs of carrying on a medical practice now are such that a physician cannot equip and maintain an office in a town of five hundred people. He must have a larger area from which to draw in order to be able to afford the facilities necessary to diagnose and treat patients, or he must be where he has access

to those facilities in either a hospital or a laboratory. To this statement there are, of course, exceptions, some of the men in the smaller towns of the state now carrying on a high grade of medical practice.

An important factor, in addition to the number of physicians, is the number of doctors in these rural counties who are already well over 60 years of age. It is important for us to know the number of these so that we can estimate what the condition will be in five or ten years from now. It is safe to hazard a guess that 50 per cent of the men, especially in the smaller towns, are 60 years of age or over. The length of service these men can give to their communities is, of course, limited, and new men will have to be found to replace them.

One of the biggest problems facing the profession is to find men to replace these older practitioners as they retire or die. It is becoming increasingly difficult to persuade the recent graduate to consider general practice, and doubly difficult to get him to start practice in a town of less than 10,000 population. Most of the young men desire to specialize and to practice only in a city where there are modern hospital facilities available.

There are several things being done in an attempt to supply the answer to this problem. Colorado, and several other states, are initiating a special intern program for general practitioners. This consists of one year rotating internship in a city hospital, six months in a small community hospital, and six months divided between a public health service and a general practice office. The deans of several medical schools announced in Chicago last winter that they are now placing the emphasis on general practice of medicine. They are trying to play down the tendency of the school itself being a factor in inducing the students to study for a specialty.

Our committee has had some correspondence with the State University of Iowa College of Medicine to see if we can possibly arrange a limited group of externships to be taken by the students who desire to do so at the end of the junior year. These students would be placed with gen-

eral practitioners in medium-sized towns to spend the summer as assistants. Inasmuch as they would not yet have their license, they could do no practice themselves. It would be expected that the physician who accepted one of these would consider himself as a teacher and would definitely attempt to train the student in the highest type of medical practice. The student would assist the doctor in many procedures, observe him in his office, home and hospital work, would do some laboratory work and gain first hand knowledge of what it means to be a general practitioner. Three months of such experience in the office of an up-to-date general practitioner would change completely the idea of the student as to the roll of the physician and also as to the ability of the general man. He would find that the general practice of medicine can be a satisfactory, remunerative life and carried on in such a way that the physician can feel that he is practicing a scientific medicine of which he need never be ashamed.

Another factor which may influence favorably the securing of general practitioners in the smaller cities is the development of new hospitals and health centers under the Hospital Construction act passed by the last session of Congress. The commission in charge of this has made a study of the needs and has recently published a list of the various counties and cities deemed most in need of hospital and health center facilities. This list will be changed from time to time, but it is a start, and it is hoped that it will soon lead to the construction of these much needed facilities. The presence of these hospitals will help immensely in influencing young physicians to locate in the more rural communities.

There is a great need for further expansion of the Blue Cross Hospital Insurance and the Blue Shield medical insurance in the rural parts of Iowa. Much of the work of the Medical Care plan has had to be done against the indifference if not the actual opposition of many of the physicians of the state. This plan was developed entirely by the Iowa State Medical Society, was authorized by the House of Delegates, and is OUR plan. It may seem that it isn't much needed now, but it will help immensely to have the people accustomed to carrying this insurance, and they will continue to do so if and when times get harder and medical bills are harder to pay. Every member of the Iowa State Medical Society should be a participating physician in this plan and should give it his active cooperation when it is presented in his county.

Another worthwhile move which is being de-

veloped is the formation of county health councils. These are composed of representatives of the various organizations in the county, who form a health council, and coordinate and foster all worth-while projects which have any influence on health. The county medical society should be one of the leading organizations in such developments. These would foster the hospital and health center building programs, the various agencies which have specific disease programs such as the infantile paralysis, tuberculosis, and crippled children's societies, and could be a moving force in getting active cooperation in the Blue Cross and Blue Shield plans for hospital and medical care.

This field has hardly been touched by the medical profession. It is our job to take care of the sick public, to advise them as to how to prevent illness, and it is also our obligation as a profession to see that they get the best and most complete medical care in the world, and to show them that we are also interested in seeing that they are able to budget and provide for the prepayment of their major expenses.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p. m.

WSUI—Thursdays at 11:45 a. m.

- | | |
|------------|---|
| Nov. 5- 6 | Venereal Disease Drama |
| Nov. 12-13 | Iowa Medical Service
Wilbur R. Quinn, Des Moines |
| Nov. 19-20 | Looking Backward and Forward Over
a Century of Medicine
John T. McClintock, M.D., Iowa City |
| Nov. 26-27 | Use Common Sense About Your Eyes
Martin J. Ryan, M.D., Sioux City |

A. M. A. DIRECTORY INFORMATION CARDS

Preparations are now being made to publish the new eighteenth edition of the American Medical Directory. The last edition of the Directory was issued late in 1942. Since that time, it has been impossible to publish a new edition because of war-time restrictions and the shortage of paper and labor.

About November 15, a directory card will be mailed to every physician in the United States, its dependencies, and Canada, requesting information to be used in compiling the new Directory. Physicians receiving an information card should fill it out and return it promptly whether or not any change has occurred in any of the points on which information is requested. It is urged that those physicians also fill out the right half of the card, which information will be used exclusively for statistical purposes.

Therefore, should any physician fail to receive one of these Directory Information cards by December 1, he should write at once to the Directory Department requesting a duplicate card be mailed.

VETERANS ADMINISTRATION

V. A. TUMOR CLINIC

The organization of a Tumor Clinic to be operated at the Veterans Hospital in Des Moines is under way at the present time. This Tumor Clinic will be organized and will function in accordance with the minimum standards recommended and approved by the Board of Regents of the American College of Surgeons. The broad principles recommended by that College will be assembled as the framework for the organization of the Clinic and it will be modified as necessary to properly diagnose, treat, and follow patients in this hospital. It is intended that the Clinic will cooperate with the Cancer Division of the Department of Health of the State of Iowa in its management of neoplastic diseases and that it will stimulate the interest and utilize the advice of physicians in the state who refer patients to this hospital.

The Tumor Clinic will offer full diagnostic and therapeutic facilities. The personnel will consist of the Pathologist, Radiologist, Chief of Surgery, Chief of Internal Medicine, and the Clinical Director. One full-time clerk-stenographer will be assigned to the Clinic who will devote her full time to work in connection therewith.

Meetings will be scheduled and conducted weekly. Cases will be completely worked up before presentation at the Clinic. At these meetings all diagnostic and prognostic findings in the history, physical examination, roentgenologic examination, and the pathologist's report of biopsy examination when performed will be reviewed. Therapy will then be recommended and will be promptly carried out at the hospital. Patients will be reconsidered as necessary in the course of treatment and they will be examined and discussed again before discharge, at which time a specific follow-up program will be outlined.

An additional meeting will be held each month, at which time one permanent member will report on the progress of Clinic cases generally, specific cases of particular interest, groups of cases of similar neoplasms, or some subject in oncology.

In addition to the permanent members of the Tumor Clinic, the entire hospital staff, all consultants, physicians of the city of Des Moines, representatives of the Cancer Division of the State Department of Health, and referring physicians will be encouraged to attend all meetings possible.

Copies of the Tumor Clinic reports will be forwarded to the Cancer Division of the State Department of Health, and duplicate microscopic sections of biopsies will be on file in that office. In addition, a complete tumor record, biopsy slide, photographs, x-rays, and progress notes will be maintained in a Tumor Clinic file at the hospital. All pertinent data will be coded according to standard nomenclature of diseases and operations and will be readily available for review of individual or collective cases. The Social Service branch of the Veterans Administration will be made available to assist in the management of patients. It is anticipated that they can do much to enable patients to return for check-up examinations.

A specific follow-up program will be inaugurated on each case considered before the Tumor Clinic. These will be in the form of written follow-up records at specific intervals, and before discharge a specific time for a follow-up examination will be recommended by the members of the Tumor Clinic which information will be given to the patient.

The Veterans Administration will not be able to pay the transportation cost for a patient to return to the hospital for a follow-up examination. If at the time of examination, however, it is deemed necessary that the patient be re-admitted to the hospital for further study or therapy, his admission will be arranged promptly so that he will not be required to go home and return to the hospital at a later date.

At this point I believe it is well to transmit some information to the physicians of Iowa which apparently is not entirely clear. Unlike the hospital at the State University of Iowa, patients referred to this hospital must give permission in writing before any medical information can be transmitted to any other individual, which includes the referring physician. It is for that reason that reports frequently are not sent to the referring physicians when patients are admitted or discharged. Without the patient's request or authorization it is impossible to release such reports. With respect to the Tumor Clinic, however, patients will be contacted specifically at an early date requesting authorization to transmit information regarding their case to the referring physician. If this is obtained, an attempt will be made to notify

(Continued on page 524)

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. FRED MOORE, 634 40th St., Des Moines 12

President-elect—MRS. A. G. FELTER, Van Meter

Secretary—MRS. CHARLES A. NICOLL, Panora

Treasurer—MRS. NOBLE IRVING, 4323 Ingersoll Ave., Des Moines 12

LINES FROM MRS. FRED MOORE, STATE PRESIDENT

Two important meetings for the State Auxiliary have been held in the past two weeks. From the fall conference and board meeting held in Des Moines on Sept. 29 we gained a sense of direction in our work together. The Auxiliary is finding its place in community activities and is seeking to build its organization on a solid, permanent basis.

The wealth of material from committee chairmen pointed to the fact that no county auxiliary can be content to be organized for social purposes only—important as it is and always will be that we develop friendliness and cooperation within our own groups. Because we are physicians' wives, we find our opportunities for service many and varied, and there are responsibilities which are particularly ours.

When the definite suggestions come to you from this meeting, you may feel a little overwhelmed but will realize that each county Auxiliary and member-at-large will need to choose her own major and minor. Some things we all need to do are the regular routine activities and working always to become well informed, intelligent Auxiliary members; to develop public relations; to promote the reading of *Hygeia*; and now, to support our Student Loan Fund, which is our common responsibility. Then, we will want to choose our service program according to the needs and opportunities in our counties and the interest of our members. Our total contribution depends on the purposeful, effective effort which each member makes to fit into the definite program. Let's go to the next convention with a feeling of greater accomplishment in work well done.

With the acceptance of the recommendations of the Student Nurse Recruitment Committee, we brought to fruition the plans which were begun in 1941 when we established a student nurse loan fund. It is most gratifying that Mrs. W. R. Hornaday and her committee have so quickly found the way of putting the fund to work and insuring its permanence. The support of this fund is one of the tangible things we can work on together, individually and in groups.

The other important meeting was the state meeting on Medical Service and Public Relations which we were invited to attend with the doctors. It was a most stimulating program, and we are gratified to have shared it. The report will be found elsewhere.

You will be interested to know that your president and president-elect will be attending the National Auxiliary Conference at Hotel La Salle in Chicago, Nov. 6 and 7.

MEDICAL SERVICE AND PUBLIC RELATIONS MEETING

The first state meeting on medical service and public relations was held at Hotel Fort Des Moines, Des Moines, Oct. 9, 1947. A small group of Auxiliary members attended. Officers present were: Mrs. Fred Moore, president; Mrs. J. H. Chittum, first vice president; and Mrs. C. A. Nicoll, secretary. There were more than 100 people at the luncheon.

The general theme of the meeting was the responsibility of the doctor to his patient, not only as a patient, but as a member of society. All speakers were agreed that medical prepayment plans require professional support and understanding.

Mr. T. A. Hendricks, Secretary of the Council on Medical Service of the A.M.A., pointed out in his speech on "Suggestions for Iowa's Public Relations Program" that "groups can lay programs, but only individuals can carry them out." He believes that "an informed profession is a 'must' these days" and "a positive program is essential to lick socialized medicine." Further, "public relations must be natural and not obvious." The State Medical Society of Missouri considers public relations of such importance that it employs a full-time field man to contact every doctor in the state. The national convention of the A.M.A. at Atlantic City "made it almost obligatory to set up and use health councils." County Medical Societies are urged to experiment with them by means of a program to fit local needs.

Mr. V. A. Pangborn, state director of the Hospital Program, in his talk on "Hospital Survey and Construction in Iowa," called attention to the fact that patient-stay in hospitals has been cut about 30 per cent so that more people may be accommodated. In 1946 fifty-bed hospitals were caring for more than 100 patients each day. Ninety-two per cent of the babies born in Iowa in 1946 were born outside of homes. This indicates that "hospital care pays little attention to county or township boundaries," regardless of the fact that "a smaller percentage of the income dollar (1.5) goes to medical care than in 1920."

Although the national construction program makes

an allotment of one-third to match the state's allotment of two-thirds construction fees, this is not nearly enough and must include equipment as well. "All facts and figures are meaningless unless a community proves its need for a hospital and its desire to support it. Medical men must lend their guidance so a hospital will not be more than a community can support. This situation is worse than insufficient service."

Mr. F. E. Smith, Director of Associated Medical Care Plans, A.M.A., presented a forceful explanation of "Medical Service Plans in the United States." He explained that AMCP is a clearing house for medical care plans and functions as a trade association. There are sixty non-profit plans in use in thirty-nine states. Forty-four of these sixty organizations are now members of AMCP. Fifty-five per cent of Iowa doctors participate in the Iowa plan. It is unfortunate that though the plans have been presented by doctors, so many are uncooperative or indifferent. "The medical profession now has its 'neck out' to some 7,000,000 people on medical care; there must be a sense of shared responsibility between sponsor and agent. County medical societies must convince their own members that AMCP is the right way to solve the problem, then keep the membership informed and up-to-date on the plans."

A special committee appointed by the A.M.A. derived some conclusions about doctors and their relationship to prepayment plans. Some of the findings were:

The average doctor does not understand how his own state plan operates. Fee schedules must provide just compensation. Payment claims should be subject to medical interpretation. Restriction contracts are often misunderstood.

Doctors resent outside interference but sometimes lack discipline in their own ranks.

Rural and urban differences in plans cause lack of cooperation. Specialists feel that they are being discriminated against.

Doctors are not taught enough medical economics in school and do not understand the subject. Nor do they read material sent to them through the mail. In some states there is a demand for osteopathic participation in prepayment plans.

Doctors dislike and resist paper and form work and fail to teach their secretaries or office help essential details of the plans. Inaccurate determination of incomes sometimes results.

"The shaping and control of public opinion is a fine art. Thirty days after professional care a patient (with prepayment insurance) is not just a patient but a social problem." (This statement is the most intensive in implication of any comment on prepayment plans we have seen in the last four years.)

F. L. Feierabend, M.D., in his luncheon address on "Social Responsibilities," showed that regimentation might make for security but would take its toll in loss of liberty. Ideals are unattainable; objectives

can be reached. The profession is responsible to man as a member of society as well as to man as a patient and a means of earning a livelihood. With apt references to varied philosophies and to the Christian way of thinking, Dr. Feierabend concluded with this thought: "The common good takes precedence over all other good."

Mrs. K. M. Chapler, Press Chairman

CANCER CONFERENCE

A Cancer Institute for doctors was held in Des Moines on September 23. A dinner for the visiting wives was enjoyed at Grace Ransom's Tea Room that night. Mr. E. L. C. White of Spencer presented the plans for the cancer program. It was a fruitful meeting in that several county chairmen for the campaign were chosen from doctors' wives who were present.

Mr. White delivered a prepared address which outlined the new program specifically and which may be obtained from the Iowa Division, American Cancer Society, 117½ N. Federal Avenue, Mason City, Iowa. Material on cancer and contacts for speakers on cancer may also be sent to Dr. E. G. Zimmerer, State Health Department, Des Moines, Iowa.

Mr. White gave a brief history of the growth of the Society, named the sponsors for the Iowa campaign, then explained that 25 per cent of all money raised will go for the national research program. Sixty per cent of the funds raised in Iowa will remain here for further research, education, and service in the state. The greatest need is LAY EDUCATION and the organization of permanent chapters in every county in the state. One out of every eight persons in the nation and one out of every seven in Iowa will die of cancer this year unless the public is educated to periodic examinations and to supporting the funds required for research.

There are definite things an Auxiliary member can do:

1. Give money.
2. Assist local county chapters by bringing to our own communities speakers, visual education, public forums, radio interviews, and distributing literature.
3. Volunteer for home service program which includes home care, surgical dressings, etc.

Eight other Cancer Institutes for doctors will be held in key cities throughout the state. An Institute is being planned for Mason City. There will be one at the Hotel Ottumwa, Ottumwa, Oct. 23 and another in the Fort Dodge Room of the Walden Hotel, Fort Dodge, November 4. Doctors' wives are urged to plan meetings such as the one held in Des Moines and organize forces in order to learn more about the state campaign against cancer.

The fight against cancer has been one of the major projects of the State Auxiliary for the past few years, and whatever intelligent backing doctors' wives can give to the program will involve a three-fold radiation for good: local, state, and national.

Mrs. K. M. Chapler, Press Chairman

FALL CONFERENCE AND BOARD MEETING

An estimated group of thirty eligible members of the State Board of the Woman's Auxiliary, county presidents and presidents-elect were in attendance at the Hotel Savery on Sept. 29 for the meeting and luncheon.

Mrs. Fred Moore, State President, reported sixteen organized county Auxiliaries. In her report she commented upon "the big gaps" in Auxiliary work because the state is so meagerly organized into county groups. She recommended that County Auxiliaries follow an active program as well as a social program. We need to perfect our methods of communication and know how to work. We need to make better use of "The Woman's Auxiliary News." More frequent leadership councils might promote more unity and achievement.

Mrs. J. F. Veltman's report on *Hygeia* appeared in the October issue of "The Woman's Auxiliary News." To facilitate the work of her committee as well as all State Auxiliary work, a motion was passed authorizing the secretary to write to the secretaries of all county medical societies to obtain an active master list of the names of all doctors' wives and widows.

Mrs. W. R. Hornaday, chairman of Student Nurse Recruitment, reported that the Nurses' Loan Fund created in 1941 had grown to \$443. She read the proposals of her committee in regard to the fund which is now functioning to further the nursing education of two girls. Each Auxiliary is urged to continue recruiting nurses. It is recommended that the fund further the education of another girl each successive year. In order to maintain the fund and to make it grow, each Auxiliary member is urged to be responsible for a minimum of 50c to be paid by March 30 of each year. This money may be earned or simply donated and the above recommendation of the Board will be brought to the attention of State Convention in April. The committee prepared a contract for applicants which is interest free during training and six months thereafter at which time it would assume the usual 6 per cent interest. Mrs. Hornaday and her committee deserve much praise for the businesslike manner in which they worked out the details of the Nurses' Loan Fund.

Mrs. M. H. Brinker, Chairman of Work for the Handicapped, reported that eight counties are now organized for screening of school children with disabilities. She recommended that individual Auxiliary members might discover the needs of local handicapped persons by interviews with doctors and school superintendents. Adequate support of the Easter Seal program means much to these unfortunates. Auxiliaries can aid by providing sales outlet for the handicraft of handicaps or by promoting an exchange of accessories for handicapped people.

Mrs. C. H. Mitchell's report on Public Relations will be found in its entirety in this issue of "The Woman's Auxiliary News." Mrs. R. M. Minkel's Program suggestions will appear in another issue.

Mrs. J. H. Chittum, first vice president, has defi-

nite plans including experienced assistance for personal appearances throughout the whole state in the interest of broader organization of county Auxiliaries.

Mrs. Charles Ryan reviewed some of the tentative plans for the State Conventiton of the Auxiliary in April. It is hoped that there will be more social activities. In addition to the usual luncheon of the State Board, there will probably be a tea for visiting members, a dinner-bridge, a visit to the Spastic Clinic at University Church of Christ, and inspection of the new Art Museum at Greenwood Park.

Mrs. E. T. Warren presented the first draft of the new proposed State Constitution remodeled along suggested national lines. The Board recommended minor changes. The new Constitution will be presented to the State Convention in April for adoption.

Mrs. K. M. Chapler, Press Chairman

REPORT TO THE BOARD SEPT. 29, 1947

Mrs. Fred Moore, Mrs. E. E. Shaw, Mrs. G. E. Downing and myself met as a public relations committee on September 20.

Many things were discussed whereby we could help to make our community a more healthful place in which to live.

As a basis for our activities we used the article by Mrs. Harold F. Wahlquist published in Medical Auxiliary Journal. A few key sentences were: "We must find acceptable means to promote health educational activities—activities are governed by recommendations from our parent body. . . . All communities offer many opportunities for leadership in health projects. Throughout the year we have health drives. . . . Their governing board should have wives of physicians among their members. . . . It would be impossible for her to set up such a program alone, but let her be the spark to start a similar endeavor in a church group or Federated Club. Americans must understand that in our free society those who are best qualified to serve should serve. This year our aim is a Health Day in every city and town in the nation! Let us plan to give the public real and sanctioned information. Prepare an all-day program varied and forceful. Include in it a health film, a talk by a city health officer, short talks on tuberculosis, cancer, etc."

The Iowa Medical Service Plan is one about which we should all be informed and able to talk in our various groups with facts to support our discussion. This will be explained in detail in a later report. This was the basis of the state meeting on Medical Service and Public Relations which was held in Des Moines October 9. A few key sentences which they brought out were that ". . . The group may lay down the program but only individuals can carry out the program. Two per cent of the members who are disgruntled can spoil it. There are social and moral problems related to financing and this MUST be accepted by physicians on the local level. Rights of common good take precedence over individuals in a democracy. Therefore the doctors exercise certain

duties. They must make GOOD medical service available to ALL the people. If we obtain happiness, we find it through work and by doing the things we ought to do."

The cancer program and what we can do about it is another activity in which we are interested as an auxiliary. We attended a cancer meeting in Des Moines October 23 at which time Mr. E. L. C. White gave us a very enlightening idea of the program of the cancer society's plans for Iowa. A few excerpts from his address will help us to be aware of what that program is. These follow.

Along educational lines it is proposed to have:

1. Refresher and postgraduate courses for doctors.
2. Establishment of a Speakers' Bureau in cooperation with the State Medical Society, the State Department of Health and the State University.
3. Purchase of literature, films, etc., available to every chapter.
4. Publication of a state bulletin (New Horizons).
5. Collection of vital statistics.
6. Release of a weekly health column to newspapers.
7. Radio, newspaper publicity, signboards, etc.
8. Exhibits at fairs and conventions.
9. The operation of a mobile unit to carry the educational message into every county.

Along the lines of research and service are:

1. Continued support at the State University and granting fellowships for the study of cancer in Iowa.
2. Information to help the indigent or medically indigent get diagnosis and care.
3. Nurse's scholarships.

What you and I can do:

1. We can give money.
2. We can lend our assistance to our local county chapters.
3. We can volunteer for the Home Service program.

The committee felt that it would be well to call to the Auxiliary members' attention that there is a fine selection of health films available at the State Board of Health office which may be used for programs in the various organizations of which you might be a member. Cost is transportation one way.

Beulah Mitchell (Mrs. C. H.)

NURSES' LOAN FUND

Ever since your dimes and dollars began to jingle in our Nurses' Loan Fund, we have looked forward to the time when we could really put them to work. That time has come, for now your Auxiliary is helping one of Iowa's fine girls take her nurses' training at Iowa Lutheran Hospital in Des Moines. She came to us highly recommended by her high school where she was valedictorian at the time of her graduation. She was accepted by the hospital from a great many applicants because of her splendid qualifications and sincere interest in the course she had chosen. We are most happy that it is our privilege to help.

At a recent meeting of the Board of Directors,

the Nurse Recruitment Committee presented several recommendations for approval. They were:

1. Acceptance of the agreement which will be signed by girls seeking loans from our fund.
2. Acceptance of two girls this year and one each year following until our fund can take care of more.
3. Asking of each Auxiliary to be responsible for a minimum of 50 cents per member. This money may be raised in any way the group decides or may be a gift from their treasury or the individual members. The money should be sent to the Chairman of this Committee, Mrs. W. R. Hornaday, 612 44th Street, Des Moines 12, Iowa, by Mar. 30, 1948. It will cost about \$300 each year to keep the two girls in training and, of course, each new applicant will increase our obligations. We have another girl in Iowa City who will need help later. However, our investigations have not been completed as yet.
4. Asking of each Auxiliary to continue with nurse recruitment. Contact your high school girls to find their interests. Contact this committee for use of the film, "For You to Decide," a delightful little insight into the hospital life of a nurse. Send for literature and further information.

These recommendations were accepted and now your loan fund is a real working fund. You have wanted a worthwhile project; now you have it. There is only one way it can continue to work and that is with the support of each and every member of our organization.

Mrs. Harry E. Ransom, Des Moines
Mrs. Pauline Thatcher, Fort Dodge
Mrs. Frank W. Fordyce, Des Moines
Mrs. Howard W. Smith, Woodward
Mrs. B. F. Kilgore, Des Moines
Mrs. W. R. Hornaday, Des Moines

ACTIVITIES OF COUNTY AUXILIARIES

Polk County

The Polk County Medical Auxiliary opened its fall season with a luncheon at Younkers Tea Room, September 26. Sixty-two members were present. We are proud to announce that the membership to date numbers 130. We voted to sponsor a showing of handicraft and hobbies of the Iowa Society for Crippled Children which will take place next spring. Mrs. Eberle Thornton and Mrs. Ollan Phillips will act as co-chairmen. Mrs. K. M. Chapler of Dexter gave us a splendid book review on Perry Burgess' book, "Who Walk Alone."

Mrs. F. A. Springer, President

Dubuque County

The Dubuque County Medical Auxiliary has raised \$245 to furnish a room in Mercy Hospital. On October 19 the Auxiliary will serve as hostesses at the opening of the hospital.

Mrs. W. A. Henneger, President

TO COUNTY PRESIDENTS

If any of your members do not receive the "Woman's Auxiliary News," please send names and addresses to the state secretary, Mrs. C. A. Nicoll, Panora, Iowa.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. WALTER L. BIERRING, Des Moines, Chairman

DR. HENRY G. LANGWORTHY, Dubuque, *Secretary*

DR. CHARLES L. JONES, Gilmore City

DR. CLYDE A. HENRY, Farson

DR. LESTER C. KERN, Waverly

Interesting Historical Records

CLYDE A. BOICE, M.D., Washington

Samuel J. Rodman of Ohio attended the course of lectures in the Medical Department, University of Pennsylvania, 1833-1834, being graduated in 1834. He lived only a few years after his graduation in medicine. His registration cards, medical library and instruments became the property of his brother, Dr. Wesley F. Rodman, a graduate of the Medical College of Ohio, Cincinnati, in 1852, who came to Washington, Iowa, that year and practiced there until his death in 1882.

The last member of this family, a son, knowing of my interest in medical history, willed all of the instruments and books in the family to me. At his death a few years ago, the administrator of the estate gave them to me. It is thought a brief description of some of the items might be interesting to the readers of the JOURNAL.

The registration cards issued to Samuel J. Rodman in October, 1833, indicate the type of medical lectures presented at that time at the University of Pennsylvania, the oldest medical school in the United States. Aside from the card of matriculation, separate cards were signed by the members of the medical faculty. Among them appears the name of Dr. N. Chapman, professor of the institutes and practice of medicine and clinical medicine, who in 1847 became the first president of the American Medical Association. It will be noted there is also an admission card "to attend the practice in medical and surgical wards of the Alms House." There is also one registration card issued to Wesley T. Rodman, brother of Samuel, to the lectures on chemistry and pharmacy in the Medical College of Ohio, 1841-42.

The shelf of medical books of which a plate has been prepared, contains the following: Chapman's Lectures, 1833-34; Derneis Midwifery, 1826; Wistar, System of Anatomy, 2 volumes, 1825; Gilson's Surgery, 2 volumes, 1825; Ure's Chemistry, 2 volumes, 1821; Horner, Special Anatomy, 2 volumes, 1833; Denman, Practice of Mid-

wifery, 1824; Essay on Yellow Fever, Bancroft, 1820; Practice of Physic, Cullen, 2 volumes, 1822; Diseases of the Chest, Laennec, 1835; Practice of Medicine, Eberle, 2 volumes, 1830; Dislocations, Sir Astley Cooper, 1832; Maternia Medica and Therapeutics, Eberle, 2 volumes, 1824; Bichat, General Anatomy, 1822. These were evidently among the textbooks used at the University of Pennsylvania one hundred and fourteen years ago.

Probably the most distinguished physician of that period was Dr. Nathaniel Chapman, the favorite pupil of Dr. Benjamin Rush, and later his successor as professor of the Institutes of Medicine in the University of Pennsylvania, the first editor of the *American Journal of the Medical Sciences*, 1820, and the first president of the American Medical Association in 1847.

A few brief abstracts of his lectures delivered in 1833-34 are presented:

PATHOLOGY

The causes of disease are divided into remote, predisposing, exciting or occasional and proximate. Causation is therefore a chain of four links. By the remote, the predisposing is produced; and the exciting, the proximate or the disease itself is formed. To illustrate this, we will take a case of inflammatory fever. Cold, the remote cause induces debility, which is the predisposing, the warmth of the hot room is the exciting cause, giving rise to the proximate or the irregular action which is considered the proximate cause of fever, or, in other words, the fever itself, the "Ipse Morbus" of Ganbuis. Hence there are only two essential causes of disease, since the predisposing and proximate are the effect of the remote and exciting causes. But there are some diseases produced without a predisposing or exciting cause. Thus we cannot trace them in smallpox, tetanus, hydrophobia or mania. I shall not dissent from the theory which makes debility the predisposing cause of disease.

The conditions predisposing to particular diseases are denominated temperaments. These are four in number, the Sanguinous, the Bilious, Phlegmatic, and the Melancholic.

There is a Pectoral temperament also occurring in early life. Mention is further made of "glandular, hemorrhagic, nervous, rheumatic, intestinal temperaments. These last are subject to dysentery and constipation, colic and cholera morbus, dyspepsia and flatulency."

Numerous as are the internal causes of disease which we have mentioned, its adventitious or external causes are still more extensive. Cold is another cause of disease. I have never known intense cold to fail to produce or increase the number of inflammatory diseases within the circle of my practice. From its sensible qualities we proceed to speak of a vitiated state of the atmosphere. The contamination of the greatest extent is that which arises from marshy exhalations, and which has been appropriately named Miasmata. What are the pestiferous exhalations? We are ignorant of their precise nature. A rain may give rise to disease by producing fissures in the ground through which morbid exhalations escape.

Epidemics: By epidemics is meant a disease of general and uniform prevalence. These ravages have excited such atten-

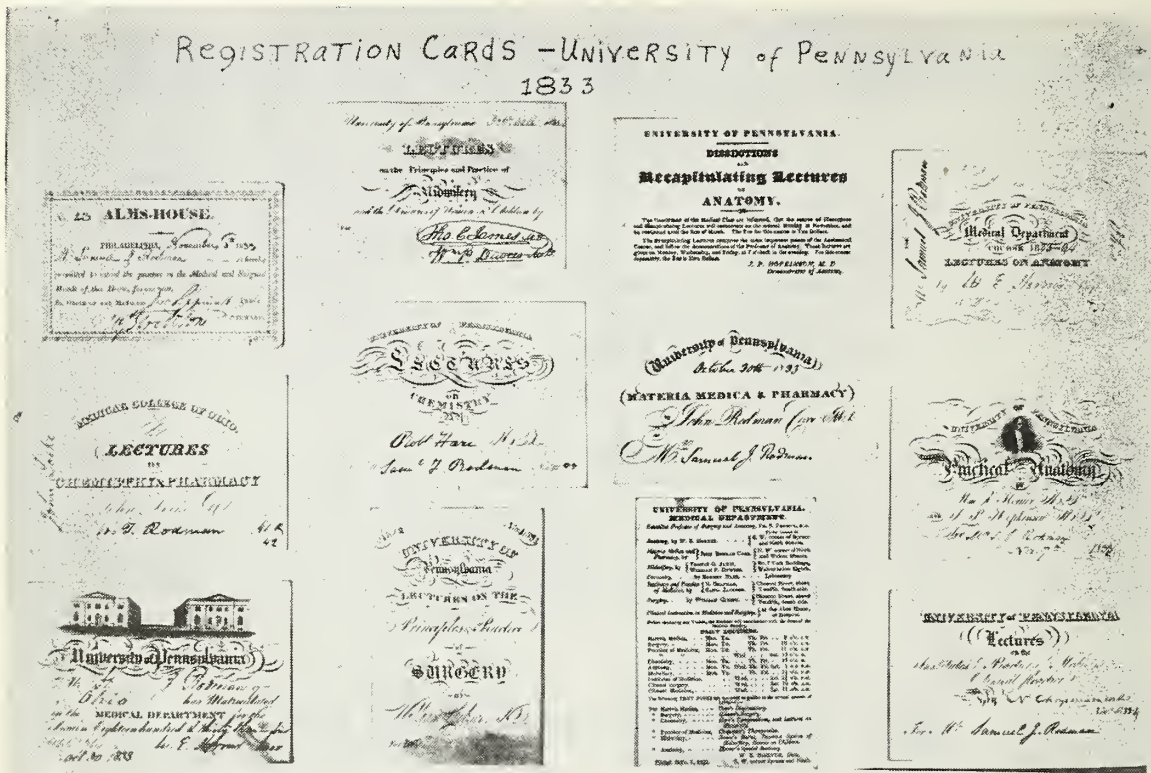


Fig. 1—Registration cards of Samuel J. Rodman, M.D., from the University of Pennsylvania.

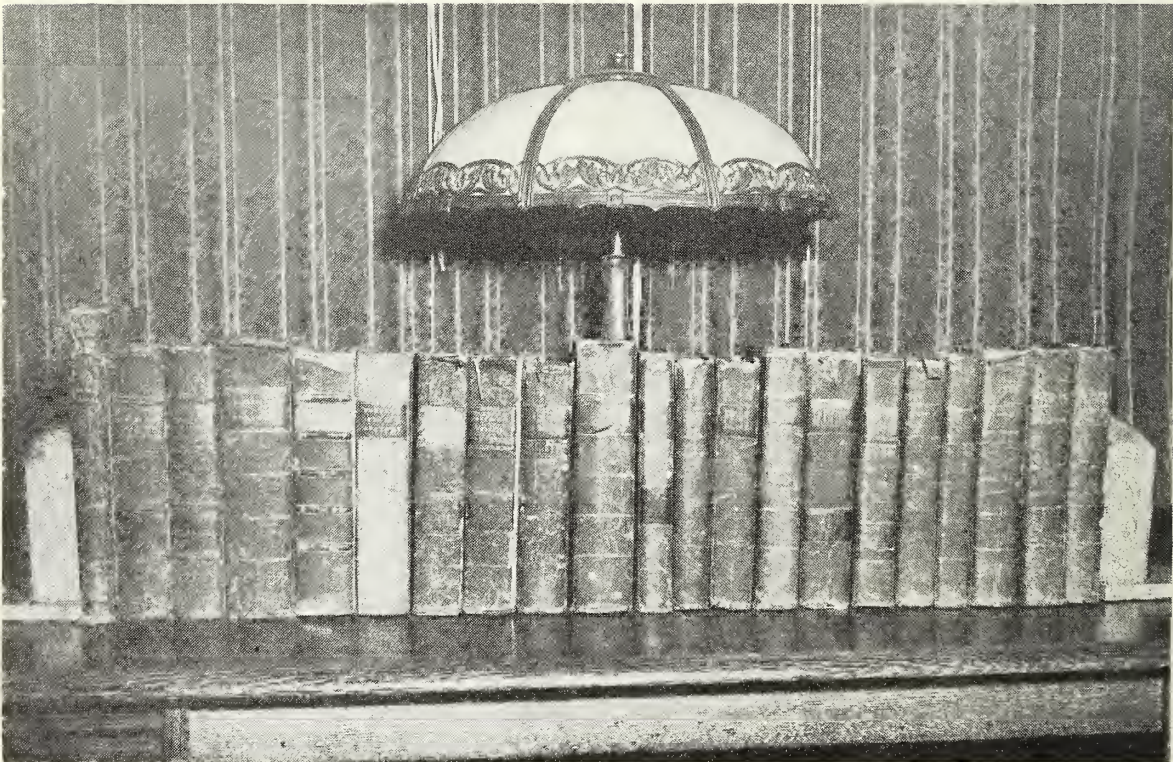


Fig. 2—Medical books from the library of Samuel J. Rodman, M.D.

tion, to their causes I believe they are owing to a single or a combination of physical causes, one of the principal being a contamination of the atmosphere. This may be traced to the causes of which I have already spoken. They are usually the vaguely imputed to a morbid condition of the air, which the ingenuity of man has not been able to detect, though lately attempts have been made to show their connection with some natural phenomena as volcanic eruptions, convulsions of earthquakes, comets, etc.

Proximity to the seashore is unhealthy, especially to persons predisposed to pulmonary diseases, why this I cannot precisely say. Dwellings have a considerable influence on health. The practice of surrounding them with trees is productive of mischief. Dress has a material influence on health. It produces effects by its quantity, quality and fashion. Flannel next to the skin helps keep up a healthy perspiration, both when wet and when dry. When persons are much exposed, linen should be excluded as it is more apt to excite fever more easily dirtied and more apt to breed vermin.

Fashion: In females especially this is very mischievous. Tight collars produce apoplexy, tight garters produce edematous legs, very many diseases are produced by tight lacing. I have known several cases of scirrhus mammae to result from the use of corsets. More than half the cases of dyspepsia in females arise from compression of the stomach by tight lacing and I have often known pulmonary consumption and cancer from the same cause. Diet becomes a source of mischief when taken in excess. All complaints of a plethoric kind may be traced to intemperance and voluptuousness. Disorders of the stomach and bowels and many cutaneous diseases arise from the same source, also prenatal drowsiness and dullness of the intellectual faculties, apoplexy, palsy and immediate death. The quality of food has also a material influence on health. No practice is more pernicious than hot meat suppers.

Drinks. Water is a cause of disease when taken too cold, producing convulsions and deaths, also in taking it at improper times and in improper quantities. Water also proves injurious when combined with other impurities, this is proved by the general health which is enjoyed in this city since the hydrant water was introduced into it.

Exercise. The kind of exercise requires some attention, turning round rapidly is the source of transient and slight indisposition, as vertigo, nausea, and even vomiting. Moving rapidly in a backward direction in many cases produce similar effects, hence some people cannot ride with their backs toward the horses.

I am next to speak of the influence of passions on health. First, those which are injurious—fear, grief, despair, anger, envy, jealousy; second, the salutary passions are love, hope, joy, ambition and courage. Fear produces paleness and contraction of the skin, mildness of the eyes, weak pulse, palpitation of the heart, frequency of breathing, and an agitated condition of the whole body. Certain occupations are injurious to health. The least healthy are those by which persons are confined from exercise and air and hence the unhealthfulness of manufacturing towns. Lawyers and physicians whose business calls them abroad are exempted from this remark and have the prospect of usual old age. Amusements are not without their effects on health. They are most mischievous to females whose submissiveness to fashion and improper dress together with the warm rooms in which they are entertained, render their amusements a fruitful source of disease. A review of what has been said should teach us by what a slender frail tenure we hold our existence. We frequently hear moralists and divines advance the frailty of human frame as a proof of the benevolent care of the Deity. How much stronger arguments furnished by this perpetual preservation from the numerous causes of disease which I have mentioned.

PRACTICE OF PHYSICS

The Practice of Physics is the most interesting and most important science which ever occupied the attention of man. This is the point to which all of our previous labours have been directed and now we are to make a practical application of the principles which I have endeavored to teach while treating of physiology, pathology and therapeutics.

Even now the question occurs, in what manner shall we arrange diseases. I shall not detail to you the various plans that have been proposed, each of which has some merits, but all are characterized by very obvious and gross defects. Brown in the spirit of innovation made a bold attack on Nosology and reduced all diseases to the classes of Stemic and Asthenic or direct and indirect debility. This does not refer to the religious body.

No one is more conscious of the imperfections of Nosology than myself. But I believe one or the other system is important. It is not fair to reason on the abuses to which it has led, for by this sort of criticism even the Sacred Writ may be turned into ridicule. To arrange diseases according to their supposed affinity into classes, orders, general species, varieties as has been frequently done seems quite impracticable. Anxious to avoid this difficulty it occurred to me that they might be arranged according to the place they occupy or the part they affect. I have in pursuing this plan divided the body into several parts or systems including:

1. Circulatory, heart and arteries.
2. Digestive, alimentary.
3. Respiratory, pulse organs.
4. Absorbents, lacteals and sympathetics.
5. Secretory, the glands.
6. Sensitive, brain and spinal marrow.
7. Muscular, muscles, tendons and aponeuroses.
8. Bones and appendages.

9. Cutaneous, external covering.
10. Generative, organs of generation.

It is easy under the several heads to describe all disease with which we are acquainted. I shall commence with the circulatory system and first of: Fevers.

This constitutes an important part of our course. What is the nature of fever? Ever since the dawn of medical science this question has been proposed and is as yet unanswered. So numerous and so diversified are the symptoms and so much under the dominion of causes which change its character. Dr. Chapman enumerated the most important of the different kinds of pulse:

1. Synocha. Hard, tense, and full pulse, occurring in phlegmias generally.
2. Synochus. Soft, full and voluminous, occurring in bilious fevers.
3. Syncula.
4. Typhoid.
5. Typhus.
6. Oppressed.
7. Soap bubble.

Cold wrists with warm hands are unfavorable symptoms. Contractions of the tendons over the arteries of the wrists is considered a very unfavorable symptom. Notes of flashes of light before the eyes unfavorable. Bitter taste denotes bile in the stomach. Sweet taste denotes gastric affection. Saltish taste denotes affections of the lungs or bronchi. Subsultus tendinum tremors of the tongue, picking at the bed clothes, are all unfavorable as is also tinnitus aurium.

Intermittents. Each paroxysm of intermittent fever has a cold, a hot and a sweating stage. About thirty years ago, the application of the tourniquet to the extremities during the cold stage was recommended by Wm. Kelly of Edinburgh. The Modus operandi is quite intelligible, it concentrates the blood in the heart and arteries so as to increase the vital powers of the organs and enable them to resist the accession of the paroxysm. In phrethic habits with a hard, full inflammatory pulse and in cases attended by local determination to the brain and lungs, it should be preceded by venesection proportioned to the violence of the local affections. Of late a preparation of the bark in which the active principle is concentrated, called cinchonine, has been extolled and much used in the treatment of intermittents. The sulphate of quinine is used in Paris in the cure of intermittents we are told with great success. Emetics and purgatives should be employed, moderate bleeding should precede the exhibition of the Bark.

Remittent fever. Cullen correctly observes that this is not a distinct disease from intermittents, that they arise from the same causes, require the same remedies and often run into each other. By attention to the symptoms we are usually led to commence the treatment by a loss of blood.

Continued Bilious Inflammatory Fever. This is the most common in our country—it arises from the same causes as the remittent and intermittent fevers—it occurs in low, marshy countries, especially after great heat has succeeded the rains. We know that fevers are often checked by the powers of medicine and the results are the trophies of our practice. Every practitioner has seen them yield repeatedly to blood letting, enetics and other remedies.

Typhus. By nosological writers it is divided into two species—Mitien and Gravier, but as one is only an aggravated form of the other, I shall not continue the distinction. This is not a form of fever incident to this city or so far as I know to this country. It is exclusively a product of the vice, poverty and wretchedness of large manufacturing towns, of jails, hospitals and camps and consequently has no place among the diseases of the United States.

Some writers say it is solely and exclusively the result of contagion, that this is true when it occurs in crowded places. I do not take it upon me to deny. The experiments of Waygarth seem to demonstrate its contagiousness under those circumstances. But admitting the correctness of his experiments, they do not go to prove its contagiousness under all circumstances. In rooms freely ventilated it is rarely communicated from one to another; besides contagion proceeds from other causes. It is perfectly well known that it is brought on by miasmata, by exertion, by abstinence and by whatever induces a state of debility.

Treatment. The fashionable plan is after the emetic to resort to purgatives—they should be the most drastic and continued many days. Venesection within the past four or five years has been revived and practiced with great success in typhus fever. Contagion is the result of vascular action not arising from vegetable or animal decomposition.

Yellow Fever. Filth, however accumulated although it will produce other fevers will not produce yellow fever. A foul condition does and may be a cause of its production.

On the whole yellow fever seems to depend on a peculiar miasmata generated by putrefaction, combined with some occult circumstances, the nature of which have heretofore eluded our observations and research. Vessels coming from tropical climates in a filthy state produce the disease; perhaps a certain state of the atmosphere is necessary to give activity to the effluvia, as vessels are frequently arriving in this condition and yet the disease is not always produced. Patients in yellow fever are apt to swell and become edematous. But whoever declares the disease to be mild and easily managed in the language of the Good Book deceiveth himself and the truth is not in him. It is a most unmanageable disease and a great terror generally takes place among the inhabitants.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- GYNECOLOGY with a Section on FEMALE UROLOGY**—By Lawrence R. Wharton, Ph.D., M.D., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Assistant Attending Gynecologist, The Johns Hopkins Hospital; Consultant in Gynecology, The Union Memorial Hospital, Hospital for the Women of Maryland, Sinai Hospital and Church Home and Infirmary. Second edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$10.
- A HAND-BOOK OF OCULAR THERAPEUTICS**—By the late Sanford R. Gifford, M.D., F.A.C.S., Professor of Ophthalmology, Northwestern University Medical School, Chicago; revised by DERRICK VAIL, M.D., D.O. (Oxon.), F.A.C.S., Professor of Ophthalmology, Northwestern University Medical School, Chicago, Ill. Fourth edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$5.
- HEADACHE**—By Louis G. Moench, M.D., Assistant Clinical Professor of Medicine, University of Utah School of Medicine; Internist, Salt Lake Clinic, Salt Lake City. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.50.
- INFANT NUTRITION: A Textbook of Infant Feeding for Students and Practitioners of Medicine**—By P. C. Jeans, A.B., M.D., Professor of Pediatrics, College of Medicine, State University of Iowa, Iowa City; and WILLIAMS MCKIM MARRIOTT, B.S., M.D. Late Professor of Pediatrics, Washington University School of Medicine; Physician in Chief, St. Louis Children's Hospital, St. Louis. Fourth edition. The C. V. Mosby Company, St. Louis, 1947. Price, \$6.50.
- INTERNAL MEDICINE IN GENERAL PRACTICE**—By Robert Pratt McCombs, B.S., M.D., F.A.C.P., Assistant Professor of Medicine and Director of Postgraduate Teaching, Tufts College Medical School; Senior Attending Physician, The Joseph H. Pratt Diagnostic Hospital; Diplomate of the American Board of Internal Medicine. Second edition, illustrated. W. B. Saunders Company, Philadelphia and London, 1947. Price, \$8.
- A MANUAL OF FRACTURES AND DISLOCATIONS**—By Barbara Bartlett Stimson, A. B., M.D., Med. Sc.D., F.A.C.S.; Assistant Professor of Clinical Orthopedic Surgery, College of Physicians and Surgeons, Columbia University, New York City; Associate Attending Surgeon, Presbyterian Hospital and Vanderbilt Clinic, New York City. Second edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$3.25.
- MORPHOLOGIC HEMATOLOGY**—Special Issue No. 1 of Blood, The Journal of Hematology—By William Dameshek, M.D., Editor-in-Chief. Grune & Stratton, New York, 1947.
- OFFICE TREATMENT OF THE EYE**—By Elias Selinger, M.D., Attending Ophthalmologist, Mount Sinai, Cook County and Michael Reese Hospitals. The Year Book Publishers, Inc., Chicago. Price, \$7.75.
- PHARMACEUTICAL LABORATORY MANUAL**—By R. A. Kuever, Ph.D., Ph.C., Dean of the College of Pharmacy, Professor of Pharmacy, Director of the Pharmaceutical Laboratories, State University of Iowa. J. B. Lippincott Co., Philadelphia, 1947. Price, \$2.75.
- PICTORIAL HANDBOOK OF FRACTURE TREATMENT**—By Edward L. Compere, M.D., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School; Chairman, Department of Orthopedic Surgery, Wesley Memorial and Children's Memorial Hospitals, Chicago; Consultant in Orthopaedics, U. S. Naval Hospital, Great Lakes, Illinois; SAM W. BANKS, M.D., F.A.C.S., Associate in Surgery, Northwestern University Medical School; Attending Orthopaedic Surgeon, Chicago Memorial and Hines Veterans' Hospitals; Consulting Orthopaedic Surgeon, Provident Hospital, Chicago; revised with the assistance of CLINTON L. COMPERE, M.D., F.A.C.S., Associate in Surgery, Northwestern University Medical School; Attending Orthopaedic Surgeon, Wesley Memorial Hospital, Chicago. Illustrated by HAROLD LAUFMAN, M.D., F.A.C.S., Department of Surgery, Northwestern University Medical School. The Year Book Publishers, Inc., Chicago, 1947. Second edition.
- PRACTICAL X-RAY TREATMENT**—By Arthur W. Erskine, M.D. Third edition, revised and enlarged. The Bruce Publishing Company, St. Paul and Minneapolis, 1947. Price, \$4.50.
- SEX POWER IN MARRIAGE With Case Histories: A Realistic Analysis concerning the Sexual and Emotional Problems of Marriage**—By EDWIN W. HIRSCH, B.S., M.D. Research Publications of Chicago, 1947. Price, \$3.
- TRICHOMONAS VAGINALIS AND TRICHOMONIASIS**—By Ray E. Trussell, M.D., Associate in Hygiene and Preventive Medicine, Former Research Assistant in Obstetrics and Gynecology, State University of Iowa. With an introduction by E. D. PLASS, M.D., Professor of Obstetrics and Gynecology, State University of Iowa. Charles C. Thomas, Publisher, Springfield, Ill., 1947. Price, \$6.
- THE YEARS AFTER FIFTY**—By Wingate M. Johnson, M.D., Professor of Clinical Medicine and Chief of Private Diagnostic Clinic, Bowman Gray School of Medicine of Wake Forest College; with a Foreword by Morris Fishbein, M.D., Editor, Journal of the American Medical Association. Whittlesey House, McGraw-Hill Book Company, Inc., New York. Price, \$2.

BOOK REVIEWS

THE 1946 YEARBOOK OF PHYSICAL MEDICINE

Edited by Richard Kovacs, M.D., Professor of Physical Medicine, New York Polytechnic Medical School and Hospital; Attending Physical Therapist, Manhattan State, Harlem Valley State, Columbus and West Side Hospitals; Visiting Physical Therapist, New York City Department of Correction Hospitals; Consulting Physical Therapist, New York Infirmary for Women and Children, Mary Immaculate Hospital, Jamaica, N. Y., St. Charles Hospital, Port Jefferson, L. I., Hackensack Hospital, Hackensack, N. J., and Alexian Brothers Hospital, Elizabeth, N. J., Senior Consultant in Physical Medicine and Medical Rehabilitation, Veterans Administration. The Year Book Publishers, Chicago, 1947. Price, \$3.75.

This edition of the Year Book is particularly

valuable because many of the advances perfected in army, navy and veterans hospitals are reported. The volume again is well illustrated and affords anyone interested in physical medicine the advantage of an excellent review of progress made during 1946.

E.M.G.

DISEASES OF METABOLISM

Detailed Methods of Diagnosis and Treatment, A Text for the Practitioner—Edited by Garfield G. Duncan, M.D., Director of Medical Division, Pennsylvania Hospital; Clinical Professor of Medicine, Jefferson Medical College, Philadelphia, Pennsylvania. With contributions by Walter Bauer, Hugh R. Butt, Abraham Cantarow, Tracy Donald Cuttle, Garfield George Duncan, Frank Alexander Evans, Ferdinand Fetter, Joseph Marchant Hayman, Jr., Martha A.

Hunscher, Friedrich Klemperer, Cyril Norman Hugh Long, Perry MacNeal, Edward H. Mason, Max Miller, Louis H. Newburgh, John Punnell Peters, W. D. Robinson, Tom D. Spies, Leandro Maues Tocantins, Abraham White, Alexander W. Winkler. Second edition. W. B. Saunders Company, Philadelphia, 1947. Price, \$12.

This very recent work on the important subject of metabolic disease is encyclopedic in scope and follows the present vogue of multiple authors. It covers, in detail, its entire field with especial emphasis on the physiologic background of the various items included.

It seems to me that the editor, Doctor Duncan, has selected an especially well qualified group of authors, most of whom are widely known contributors to the current literature. Doctor Duncan, himself, has prepared five sections, including an excellent discussion of diabetes mellitus and associated diseases.

Every practitioner, regardless of his special medical interests, must be aware of the increasing importance laid upon metabolic aspects of disease today. This book offers an excellent and fairly complete resumé of recent knowledge of these subjects and is worthy of thoughtful consideration by the profession.

J. C.

A MANUAL OF FRACTURES AND DISLOCATIONS

By Barbara Bartlett Stimson, A.B., M.D., Med. Sc.D., F.A.C.S.; Assistant Professor of Clinical Orthopedic Surgery, College of Physicians and Surgeons, Columbia University, New York City; Associate Attending Surgeon; Presbyterian Hospital and Vanderbilt Clinic, New York City. Second edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$3.25.

This volume is the second and revised edition of an excellent manual covering all types of fractures and dislocations. The illustrations are well presented. The edition is recommended to all medical students and is valuable to those treating fractures which do not require elaborate or detailed operative technics.

E. M. G.

PRINCIPLES AND PRACTICE OF OBSTETRICS

By Joseph B. DeLee, M.D., Late Professor of Obstetrics and Gynecology, the University of Chicago; Consultant in Obstetrics, Chicago Lying-in Hospital and Dispensary; and J. P. GREENHILL, M.D., Attending Obstetrician and Gynecologist, Michael Reese Hospital; Obstetrician and Gynecologist, Associate Staff, the Chicago Lying-in Hospital; Chairman, Department of Gynecology, Cook County Graduate School of Medicine. Ninth edition. W. B. Saunders Co., Philadelphia, 1947. Price, \$10.

This outstanding book, first published in 1913, has been revised and reissued in its ninth edition by

J. P. Greenhill, student and close associate of the late Dr. Joseph B. De Lee.

The book has been almost completely rewritten to keep pace with the changes in the field but it maintains the tradition of its original author by presenting the subject matter completely, yet in a clear and understandable manner with a minimum of controversial opinions.

Many sections have been completely rewritten and new chapters have been added. Among these is a chapter on Erythroblastosis Fetalis that presents an illuminating discussion of this much discussed and controversial subject. The section on Analgesia and Anaesthesia of Labor has been extensively revised and now includes detailed descriptions and illustrations of Caudal and Pudental Block anaesthesia as well as discussion of the newer analgesic drugs. The new chapter on minor disturbances of pregnancy brings together, in one short chapter for ready reference, many important points that might be missed were they distributed throughout the other sections of the book.

The series of illustrations and diagrams on the mechanisms of labor are excellent. This makes the discussions of this rather complex subject easy to visualize. All of the operative technics are thoroughly described and adequately illustrated.

This book, familiar to almost all practitioners of obstetrics throughout the world, continues to be the most universally useful book for the student, general practitioner and specialist that has been written in this field. Knowledge and understanding of all the material covered would leave little to be desired by a modern practitioner of obstetrics.

P. K. H.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY

A complete dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc.; with Pronunciation, Derivation and Definition. By W. A. NEWMAN DORLAND, A.M., M.D., F.A.C.S., Lieut. Col., M. R. C., U. S. Army; Member Committee on Nomenclature and Classification of Diseases of the A. M. A.; Editor of "American Pocket Medical Dictionary." Twenty-first edition. With the collaboration of E. C. L. MILLER, M.D., Medical College of Virginia. Philadelphia and London, W. B. Saunders Company, 1947. Price, \$8 without thumb index; \$8.50 with thumb index.

The twenty-first edition of this dictionary is certainly as complete as any volume of its kind. Those who have used the present edition will be pleased to note the addition of many new terms resulting from the research carried out during the past ten years. This volume is unqualifiedly recommended as a valuable book for any medical library.

E. M. G.

SOCIETY PROCEEDINGS

MEETINGS

Audubon County

The Audubon County Medical Society met September 23 in the Memorial Building, Audubon. Members of Carroll, Cass, and Shelby County Societies were also present. Dr. Robert M. Collins of Council Bluffs addressed the group on "The Role of the Endocrines in Obstetrics and Gynecology." Dr. Aldis A. Johnson, also of Council Bluffs, was a guest of the group.

Calhoun County

The Calhoun County Medical Society met September 24 in Rockwell City for dinner and a business meeting. Dr. Channing Smith of Granger, State Medical Consultant for Public Assistance of the Department of Social Welfare, and Mr. Ed Wieland, State Director of Public Assistance, explained the medical program which is promoted and financed by state and federal funds for old age assistance, aid to the blind and aid to dependent children.

Dallas-Guthrie Society

The regular meeting of the Dallas-Guthrie County Medical Society and Ladies Auxiliary was held October 16 in the Presbyterian Church hall, Panora. Following a 12:30 p. m. dinner, the business meeting was held. Dr. R. J. Steves of Des Moines then addressed the group on "Management of Common Skin Disorders."

Dubuque County

Dr. Clifford D. Benson and Dr. Grover C. Penberthy, both of Detroit, spoke at a dinner meeting of the Dubuque County Medical Society October 9 held in the Bunker Hill Golf Club House. Dr. Benson spoke on "Problems in Pediatric Surgery," while Dr. Penberthy talked on "Intestinal Obstruction."

Fayette County

The Fayette County Medical Society met September 16 at the Pine Lodge, Oelwein. Following a 6:30 p. m. dinner, the regular business meeting was held and current problems discussed.

Iowa and Illinois Central District Medical Association

The quarterly meeting of the Iowa-Illinois Central District Medical Association was held September 24 at Hotel Blackhawk, Davenport. The afternoon program consisted of two sound motion pictures, "Physiology of Anoxia" and "Oxygen Ther-

apy in Heart Disease." They were followed by an address by Dr. Ford K. Hick, Chicago, on "Recognition and Management of Cardiac Neurosis," and Dr. Ralph M. Waters, Professor of Anesthesia in the University of Wisconsin Medical School, on "Service in Anesthesia for Smaller Hospitals." A 6:30 dinner was shared after which Dr. Geza de Takats, Clinical Associate Professor of Surgery at the University of Illinois College of Medicine, talked on "The Surgical Treatment of Hypertension."

Johnson County

The Johnson County Medical Society met at Hotel Jefferson, Iowa City, October 1. Following dinner and the business meeting, Dr. Lucien W. Ide, Instructor in the Department of Theory and Practice at University Hospitals, spoke on "Clinical Aspects of Complete Heart Block." Dr. L. E. Janu-ary, also of University Hospitals, led the discussion.

Linn County

Members of the Linn County Medical Society will meet November 13 in Hotel Montrose, Cedar Rapids, to hear Dr. Forrester Raine of Milwaukee speak on "The Treatment of Intrathoracic Tumors."

Marshall County

The Marshall County Medical Society held its regular monthly meeting at the Methodist Church, Marshalltown, October 7. Dr. Adolph L. Sahs of the Neurology Department, University Hospital, Iowa City, presented a talk on "Epilepsy."

Page County

The Page County Medical Society met September 25 in the American Legion Club Rooms for a steak dinner and to hear Dr. Harold Anderson of Omaha, Assistant Professor of Obstetrics at the University of Nebraska, speak on "Causes and Care of Hemorrhages in Childbirths."

Polk County

Members of the Polk County Medical Society met at Smouse Opportunity School October 15 for dinner and to discuss the subject, "Education of the Handicapped Children of Des Moines." Leading the panel discussion were: Arthur S. Hill, Director of the Department of Pupil Adjustment; Miss Bess Johnson, R. N., Principal of Smouse School; Mrs. Ruby F. Van Meter, Assistant Director of the Department of Pupil Adjustment; Miss Dorothy Sherman, Speech Therapist; and Dr. Robert L. Parker,

Director of the Department of Health of the Des Moines Public Schools.

Scott County

The Scott County Medical Society met October 7 at the Lend-a-Hand Club, Davenport. Following dinner, the members were addressed by Dr. John B. Grow of Denver on the subject, "Exploratory Thoracotomy in the Management of Obscure Intrathoracic Diseases."

Sioux County

The Sioux County Medical Society met in the Alton Community Building September 22. On the program were Dr. E. B. Grossmann who spoke on "Virus Pneumonias," Dr. E. Murphy on "Bacterial Endocarditis," and Dr. A. Bushmer who showed a film on "Angina Pectoris."

Wapello County

The next meeting of the Wapello County Medical Society will be held at St. Joseph Hospital, Ottumwa, on November 4. Following a 6:30 p. m. dinner, Dr. R. H. Flocks of Iowa City will speak on "Newer Developments of Treatment of Cancer of the Bladder."

Programs of meetings held earlier in the fall were: September 2—"A Clinical Study with Presentation of Three Cases" by Dr. W. E. Herrick, Ottumwa; September 16—"Infant Feeding—The Physician's Responsibility" by Dr. R. O. Hughes of Ottumwa; and on October 7—"Cardiac Emergencies in General Practice" by Dr. D. G. Emanuel of Ottumwa.

Washington County

The Washington County Medical Society held its regular meeting September 25 at the Nurses' Home, Washington. Following a 6:30 p. m. dinner, Dr. Mildred Doster, Director of the Washington County Health Unit, spoke on matters pertaining to that office. Mrs. Grethel Marshall, Director of the Washington County Welfare Office, held a conference with the doctors about the care of old age pensioners and aid to the blind.

Webster County

Members of the Webster County Medical Society held their September dinner and business meeting in the Hotel Warden, Fort Dodge. Dr. Dean M. Lierle of the State University of Iowa spoke on "The New Technic of Submucous Resection." He illustrated his talk with colored slides and a moving picture.

PERSONALS

Dr. Dorothy Bartels has been appointed to the staff of University Hospitals as an admitting physician, it was recently announced. Dr. Bartels, who began her duties October 1, was graduated from the

University of Illinois College of Medicine in 1946 and interned at the Highland-Alameda County Hospitals in Oakland, Calif.

Dr. James G. Baumann, who formerly practiced at Riverside, joined Dr. O. H. Banton of Charles City in medical practice in September. A graduate of the University of Iowa College of Medicine with the class of 1943, Dr. Baumann served his internship at St. Joseph's Hospital, Omaha, and served in the Army Medical Corps two years.

Dr. John Beebe of Wever will open offices in Mount Pleasant in the near future. Dr. Beebe is a graduate of the State University of Iowa College of Medicine and served in the armed forces.

Dr. Thomas R. Dolan of Anamosa addressed the Mothers' Study Club September 10. His subject was "Poliomyelitis."

Dr. Robert C. Fenstermacher, formerly of Stanton, has re-established his practice in Auburn, Neb. A graduate of the University of Nebraska School of Medicine and a navy veteran of World War II, Dr. Fenstermacher has been practicing in Stanton over a year.

Dr. Charles C. Graves, Jr., of Marlboro, N. J., has been appointed Director of Mental Institutions by the State Board of Control. Dr. Graves, who was graduated from the State University of Iowa in 1922, took office October 15.

Dr. Theodore J. Greteman of Dubuque addressed the Jackson County Chapter of the National Foundation for Infantile Paralysis at its annual meeting September 24. He spoke on methods of treatment for victims of infantile paralysis.

Dr. Werner M. Hollander, formerly staff physician at Mount Pleasant state hospital, has opened offices for the practice of neurology and psychiatry in Davenport. A native of Germany, Dr. Hollander was graduated from the medical school in Bern, Switzerland, before coming to the United States.

Dr. Chester L. Putnam, State Director of Local Public Health Service, spoke at the Mahaska County Public Health Association meeting September 15.

Dr. W. A. Johnson has entered into partnership with Dr. P. O. Nelson of Emmetsburg. A graduate of the State University of Iowa College of Medicine with the class of 1944, Dr. Johnson served his internship in Johnstown, Pa., and later entered the navy, serving until 1946.

Dr. L. E. Ketner, formerly of Fort Scott, Kan., has entered practice in Oelwein. He is a graduate

of Creighton College of Medicine, Omaha, Neb. After completing his internship at St. Joseph Hospital in Kansas City, Mo., he began his practice in Fort Scott.

Dr. John D. McDaniel of Marengo recently received an appointment from the Board of Foreign Missions of the Presbyterian Church to the mission field in Siam. With his family Dr. McDaniel will sail from San Francisco for Singapore November 28. He will have charge of the medical technical laboratory in a new hospital that is to be erected in Bangkok.

Dr. Harold Morgan of Mason City addressed the Lions Club September 24 on developments in the field of medicine with special attention to cancer control.

Dr. Robert J. Neufeld and **Dr. John H. Sunderbruch** of Davenport opened a clinic in that city October 1.

Dr. Robert A. Ryan, formerly of St. Louis, who opened offices in Fairfield October 20, has been appointed city health officer. He succeeds Dr. W. T. Webb who resigned recently. Dr. Ryan was graduated from Rush Medical College, Chicago, in 1942 and served a year as intern at the city hospital in St. Louis before entering the army.

Dr. Marvin H. Schultz opened offices for the general practice of medicine in Waterloo in September. A graduate of the State University of Iowa College of Medicine, Dr. Schultz interned at St. Vincent's Hospital, Bridgeport, Conn.

Dr. Frederick J. Swift, Jr., recently purchased the City Memorial Hospital in Maquoketa. He has changed the name to Maquoketa Hospital, and it will be open for surgical, medical, and obstetric cases.

Dr. Lynn W. Thompson, formerly anesthetist at the Atlantic Memorial Hospital, resigned, effective November 1, to accept a similar position with the Lutheran and University Hospitals in Omaha.

DEATH NOTICES

Broghammer, Benjamin George, aged 49, of Cedar Rapids, died in a hospital there September 25 following a two week illness. Dr. Broghammer had practiced in Cedar Rapids since his graduation from St. Louis University School of Medicine in 1927. He was a member of the Linn County and Iowa State Medical Societies.

Donnell, John William, aged 77, died in St. Petersburg, Fla., September 27. A graduate of the Uni-

versity Medical College of Kansas City in 1912, Dr. Donnell had practiced in and around Hazleton, Independence, and Hudson until his retirement in May, 1947. He was a member of the Black Hawk County and Iowa State Medical Societies.

Klein, John Leonard, Sr., aged 73, of Muscatine, died at Bellevue Hospital September 30 of multiple myeloma. Dr. Klein was graduated from the State University of Iowa College of Medicine, Iowa City, in 1897 and had practiced in Muscatine since that year. He was a life member of the Muscatine County and Iowa State Medical Societies.

Netolicky, Wesley Jerome, aged 76, of Cedar Rapids, died September 26 in a Cedar Rapids hospital following a heart attack. Dr. Netolicky was graduated from Drake University College of Medicine, Des Moines, in 1896. He was a life member of the Linn County and Iowa State Medical Societies.

MID-YEAR REPORT OF H. S. I. I.

(Continued from page 508)

and the average Blue Cross allowance per day was \$8.90.

Those familiar with hospitalization costs at the present as compared with those of a few years ago will recognize the sharp rise that the above figures indicate. The charges for Blue Cross benefits per day in 1945 were \$6.68; the first half of 1946—\$7.80 and the last half of 1946—\$8.64; all considerably less than the \$8.90 for the first half of 1947 as just indicated. It is, of course, impossible to predict what additional increases will be, but Blue Cross officials expect further rises in the cost of hospital care.

Blue Cross provides what is termed a "service" contract under which the charges for operating room, medicines, laboratory, dressings, physical or oxygen therapy, etc., are not limited in dollars. This differs from insurance companies in that they must limit their liability in particular cases to dollar amounts because they do not have contracts with the hospitals nor have their services guaranteed by them as does Blue Cross.

V. A. Tumor Clinic

(Continued from page 512)

the physician when the patient will be considered before the Tumor Clinic, and at the time of discharge a brief summary of the case will be sent to the physician together with the proposed follow-up schedule.

It is hoped that many referring physicians will be able to attend the conferences and that visitors will enter into the discussion of each case.

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PRINCIPLES GOVERNING THE CHOICE AND PARENTERAL ADMINISTRATION OF FLUIDS

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This discussion is more or less in the nature of a command performance. One probably wonders why anyone would care to choose for a talk such a prosaic subject as parenteral fluid administration. But the pediatricians practicing in Iowa know only too well that in hospital practice, especially, where many acutely ill children come to be treated, interns and residents spend almost half their time giving parenteral fluids.

The more common uses for fluid administration total six or eight. Either there is some chemical change in the body, such as acidosis or alkalosis, or there is some degree of dehydration, perhaps even edema calling for fluid administration. Perhaps one wishes to stimulate renal function, to feed parenterally over a period of time, or maybe fluids are to be administered as an adjunct to chemotherapy.

Now, regardless of why one is using fluids, and there are other indications, of course, too, there are usually but two things to expect of fluid administration. Either one expects to make up directly a deficit in the body water and its solutes (and by that term is meant anything that would be dissolved normally in body water such as salt, sugar, or protein), or else one expects of fluid administration, indirect stimulation of metabolism, metabolism of the sort that would produce certain types of renal activity which, in turn, would produce certain chemical reactions that one wants. Or else the physician is trying to stimulate liver activity, putting the liver to work as a chemical factory to produce the desired effect.

Whenever a child, or an adult for that matter, is to receive fluid, if the problem is not the simple one of directly making up for a deficit by

simple addition but includes complex metabolic activities involving kidney and liver in particular, then doctors really ought to have a pretty good idea at the very start about the nature of the changes that have taken place and their extent. They should have a good idea, too, as to just what they hope to have the kidneys or the liver do. They ought to be fairly sure that the individual patient receiving the fluid is capable of responding in the way that is hoped insofar as renal activity or liver activity is concerned.

This discussion will be limited to covering two fairly complex problems almost opposed to each other in the general nature of the changes involved.

The first one is the problem of preoperative preparation of an infant with pyloric stenosis. Quite similarly such problems would be presented if infants or children had high intestinal obstruction, or if adults had pyloric stenosis or high intestinal obstruction.

When this problem is presented, one immediately knows from past experience that the loss of large amounts of gastric juice will lead to very characteristic changes. There are four which must be remembered.

The first one is a great reduction in the chloride content of all of the body fluids. This reduction may be 50 per cent or more of the initial concentration of chloride.

Then compensating for chloride reduction, but only partially, will be increase in bicarbonate ion. The partial compensation means, therefore, that there will be a deficiency of fixed base, also, in body fluids.

Those two changes, chloride reduction and bicarbonate increase, may be described in simple terms by speaking of them as the chloride-deficit-bicarbonate-excess type of alkalosis. That is the characteristic change which one expects chemically from loss of gastric juice.

A third change which always is present is loss of water from all of the body fluid compartments, from the cells themselves and from the blood.

When the blood loses its water, it is spoken of either as "anhydremia," the term Dr. Marriott coined for his dried-out babies, or hemoconcentration, which internists dealing with adults seem definitely to prefer.

The fourth change of possible importance would be the starvation which has developed from the prolonged vomiting, the starvation probably giving rise to depletion both of glycogen stores and of protein stores.

When a physician has such a baby and is responsible for its preoperative preparation, he knows that those four changes have taken place and immediately tries to find out how severe they are. Then he tries to discover whether one or more has become so severe that it might constitute an emergency and demand some special treatment before anything else in the way of preparation can be done.

Suppose, however, one has the ordinary baby who is not in too bad shape and whom one feels could spend two or three days in preparation for pyloroplasty. That would represent the usual baby admitted to a children's hospital with well developed hypertrophic pyloric stenosis.

The diagnosis is made; medical treatment, perhaps, has been tried unsuccessfully. It has been decided that surgical treatment is going to be necessary. The baby is admitted to the hospital and will have surgical treatment given when it is put into the best shape possible for operation.

If one feels that that is the situation, if no emergency exists, then he can fall back on one of the old proven methods of preparation.

With the first administration of salt water, nothing more happens than just an increase in the salt content of the body fluids. It usually takes almost 100 cc. per Kg. body weight of salt solution to do this, about a tenth of the baby's weight.

If further salt is given, the kidney is put to work, and use is made of the peculiar function of renal tubules which either reabsorb material needed or reject material that is not needed.

So, as more salt is given, in the glomerular filtrate that is coming to the tubules will be salt water. There is need still to increase the chloride content of the body fluids but no need to increase further the base content of the body fluids. The renal tubules reabsorb chloride independently of base, returning it to the blood for further retention, and reject base such as sodium and potassium which comes out into the urine as base bicarbonate.

That process continues until the chloride deficit as well as the fixed base deficit has been made up.

Then further administration of salt water would just give urine with salt in it.

That has been the basis for preoperative treatment of this type for many years. There are one or two pitfalls that should be mentioned before a quicker method of presentation is discussed and described.

Since there is dependence on renal activity, what happens when there isn't any renal activity? Sometimes a failure to achieve renal activity isn't the fault of the kidney, but an extra-renal factor which is really at fault.

Suppose a baby really has been so starved that the protein stores have become quite low and the plasma proteins, particularly, are low. Even though the baby were dried out to begin with salt solution administration he would become edematous and there would still be little or no urine due to the low plasma protein. There can be, therefore, very little chemical activity that the kidney can provide and, therefore, little or no correction of the alkalosis. Hence, sometimes it is vital to give plasma protein or some substitute for it, or some derivative of it, while salt solution is being given. The time factor also is of importance.

That brings us up to the other type. Suppose one has an extremely athreptic infant on his hands, one with extreme alkalosis—so much that active tetany has already been noted. Suppose the impression of that baby is that it should not be made to go two or three or four more days before food will go through the stomach and be absorbed because of its extreme malnutrition. Or suppose there is already complicating infection which is not being handled well because of malnutrition.

It is desired to speed up, therefore, the preparation for operation because despite the strides made in parenteral feeding, there is nothing quite so good as enteral feeding. If so, the doctor can do it in about 12 hours. He doesn't have to wait two, three or four days, and only some slight changes in the treatment are necessary.

One that should be spoken of first, however, is not quite parenteral fluid administration. If a physician saw such a baby with active tetany, he would immediately safeguard the infant so that he might not die of convulsions or have laryngeal spasm and asphyxia, which he might if active tetany is allowed to persist. One would safeguard by the intravenous administration of the most effective of calcium salts, calcium chloride, the dose being about $\frac{1}{4}$ cc. per Kg. body weight, of a 5 per cent solution. Then one would have on hand for him to breathe 30 per cent carbon diox-

ide and 70 per cent oxygen to stimulate respiration but without the possibility of his blowing off carbon dioxide and becoming more alkaline and tetanic again.

So with those emergencies met immediately, the real change in the treatment would be to turn from the kidney to the liver and make the liver work by administering a single dose of 30 cc. per Kg. body weight of isotonic, or 1/6 molar ammonium chloride.

Doctors have long been familiar with the oral administration of ammonium chloride. Perhaps some were taught that ammonium chloride could not be administered parenterally without grave danger. There is danger in administering ammonium chloride, but one can administer it safely if it is not given too rapidly nor in too large amounts, and if the strength of the solution is correct. It is a matter of working out the details.

Last year one of the members of the staff at the Washington University School of Medicine, Dr. Gilbert Forbes, worked out the details so it is quite a simple method. In the first place, by limiting the route of administration to the subcutaneous one, speed is controlled. It cannot be given too rapidly if it is given subcutaneously. The concentration of the solution is best in isotonic strength, which is 1/6 molar. It is quite permissible, in fact desirable, however, to add the ammonium chloride to Ringer's solution, so that it becomes 1/12 molar ammonium chloride in 1/2 Ringer's solution, because there is need for salt to be administered.

Then the amount which is almost always effectual, but not too much to be dangerous, is the figure already stated, about 30 cc. per Kg. body weight of 1/6 molar NH_4Cl . If the process has then been speeded up by shifting emphasis from renal activity to the hepatic activity, just as soon as ammonium chloride is absorbed and reaches the liver, liver cells quickly convert the ammonium ion into urea, and the chloride ion, thus freed, acts just like hydrochloric acid, taking away base from base bicarbonate and therefore reducing the alkali reserve of the body fluids.

Of course, much more could be said about technics and details of this type of problem, but space won't permit it. Hence, let us turn next to the problems of severe diabetic acidosis and, perhaps, to other types of ketone body acidosis, at least those that begin with ketosis. There are six characteristic changes which take place in the body, and we state them as our primary objectives of treatment. These are the things we want to do away with rapidly but safely:

(1) Actual acidosis itself which is a reduction

of bicarbonate and pH of body fluid; (2) the dehydration and the anhydremia; (3) the complex electrolyte change in body fluids; (4) ketosis which should be abolished; (5) exhaustion of glycogen reserves; (6) degree of hyperglycemia and glycosuria.

The method which is advocated can be regarded as consisting of the use of three tools: insulin, sodium lactate, and hypotonic Ringer's solution. These are listed in the order of importance as the author sees them. Notice in the top position, as far as effectiveness in relieving acidosis is concerned, is placed the indirect effect secured by the liver metabolism of one of the sodium lactate isomers, the sodium L+.

The liver works very rapidly on that particular kind of lactate. It converts the lactate quickly into glycogen, sets free sodium, and the sodium is allowed to combine with other acids, such as carbonic acid.

Second in the matter of speed would be the metabolism of the other lactate isomer, which is a little slower and which goes on to carbon dioxide and water, also freeing sodium. Third would be the abolition of ketosis, which is the insulin effect. Finally, fourth, would be renal activity, which is still slower.

Contributing to the relief of the dehydration and the anhydremia would be all of the solutions that are given, of course. Occasionally, plasma protein again is necessary to maintain a good plasma volume and a good blood flow and, without it, failure may result.

Finally, re-establishing a normal electrolyte pattern would be the actual administration of all electrolytes, renal activity, and the abolishing of such abnormal symptoms as vomiting, polyuria, and ketosis.

The fourth objective, that of abolition of ketosis, is secured entirely by the effects of insulin, and the restoration of liver glycogen is largely due to insulin effect. It is aided by the lactate effect. Finally, the reduction of the blood sugar and the glycosuria is an insulin effect.

Step-wise procedures have been developed that we use in what is almost a routine method for the treatment of severe diabetic acidosis in our clinic. First we give an amount of insulin that we are sure is more than the minimal amount required to abolish ketosis. From my own figures and calculations, it seems that maybe about half a unit of insulin per Kg. body weight abolishes ketosis at a maximal rate. Anything beyond that doesn't speed it up more but has its effect chiefly in lowering blood sugar and in helping to restore glycogen.

The amount that we generally feel is given best is 2 units per kilo. Then, as soon as that is given, we give, usually intravenously to restore blood volume quickly and improve blood flow quickly, 1/6 molar (isotonic) sodium lactate in an amount equivalent to 30 cc. per Kg. While that is running intravenously, we give a similar amount subcutaneously mixed with 40 cc. per Kg. of Ringer's solution.

That latter mixture, 30 of lactate and 40 of Ringer's, we often speak of as half fortified lactate Ringer's solution. That is all the treatment for the first six hours.

After the six-hour period, we take stock of the situation. Why? Because we are now running out of insulin effect, and we have had all the effect we were going to get from the lactate administered. If we find that the subject still has severe acidosis, we give more lactate and always more insulin. If we find that dilution has lowered the plasma protein content so that poor renal function and edema are present, then we begin to supply plasma protein at the six-hour period.

I would like to say that for almost every job one has to do, there might be several methods that will be quite good, and each will select a method according to the patient. Certainly, in the treatment of diabetic acidosis, there are at least two others that are very commonly used and perhaps are preferred by many people.

The first one is that popularly known as Joslin's method, and the one advocated by him and his followers. It makes use, first, of insulin and then of isotonic sodium chloride, and the third component is the oral administration of water and fruit juices.

The second method, that of Peters and his associates, makes use of pretty much the same amount of insulin, so that is the same. He really originated and emphasized the use of sodium chloride. That is the same. But Peters does not rely on anything given by mouth for the obvious reason that too often it is vomited. Instead, he selects some patients for initial administration of sodium bicarbonate as the alkalizing agent, and particularly recently has emphasized the use of glucose in large amounts to be given intravenously.

Our method carries over the insulin just as it is used in Joslin's and Peters' method. We have substituted hypotonic Ringer's solution for isotonic saline solution to get a little bit more water effect and, also, to get the effect of potassium, calcium and magnesium as well as sodium, because I do think that is of some value.

We also do not rely on anything to be given by mouth. We substitute sodium lactate for so-

dium bicarbonate, because we think it is just as effectual but safer and more easily administered.

Finally, we think there is no need for the administration of more glucose because of the glucogenic effect of the lactate. The sixth molar solution of sodium lactate is the equivalent of a twelfth molar solution of glucose. When you use 60 to 90 cc. per Kg. body weight of 1/6 molar lactate solution, you are giving a good substantial amount of potential glucose. We rarely have to give more glucose unless the subject, on the second or third day of treatment, is unable to eat. Then he has to be handled the way other subjects do who have to be fed parenterally. That is a rarity with us.

Next are some details of recovery that show the type and especially the speed of recovery which ought to make one understand why we prefer our method.

If our bodies were perfect and could meet emergencies perfectly, our respiration would become so good, as we developed acidosis, that we would lower the tension of carbonic acid in exactly the same proportion that the bicarbonate of our body fluids was lowered. If that were true, the pH values would all be up in that narrow zone called complete compensation.

While Gamble stated somewhat roughly, or approximately, that respiration was about 50 per cent efficient usually, meaning sometimes it wasn't that good and sometimes it was better, in most of my analyses, respiration proved to be a good deal less than 50 per cent efficient.

A point that has been overlooked by everyone in his writings on the subject is: when a pH has to be restored from a very low level, let us say from 6.9 up to 7.4, all chemical buffers such as proteins and phosphates become stronger acids as the pH rises. They claim more and more alkali. Where does the alkali come from? It can only come from weaker acids in combination with base, such as carbonic acid. So, lactate and bicarbonate effects are dissipated when pH's have to recover in this way. That is the real reason why some children really have to have rather large amounts of alkali to get good, quick, effectual recoveries.

On three occasions we muffed the diagnosis initially of diabetic acidosis. One of these babies was only eight months old and the other two were each fourteen months of age. All we could see was obviously severe acidosis, so we treated them with our method of treating acidosis without insulin. Then we found out they were diabetic. All three were beginning to recover appreciably more rapidly than they would have recov-

ered by the Joslin method of treatment. That is then another advantage—lactate gives you a chance to make a second diagnosis and make up for some of your mistakes, sometimes.

Since we have used lactate in our treatment of severe diabetic acidosis, we have had 123 cases. They were divided into groups, as far as the severity of the acidosis was concerned. There were 48 extreme, 43 severe, 23 moderate, and only 9 mild. The only deaths occurred in those with extreme acidosis. There were five deaths. Three died of infection, two of them with Staphylococcus sepsis, and one with pneumonia.

I don't think we could have done much better for them except with the use of antibiotics such as now available. However, I am sure we contributed to the death of the first child and to the death of the last one.

The last remarks will be spent in emphasizing those pitfalls. We made the mistake in the first child of giving strong lactate, a molar instead of a sixth molar, which I have emphasized. We fell into that trap because all of our experimental work was done on ourselves and other normal subjects who were not dehydrated and who didn't have fever. But in the presence of fever and dehydration, it is risky to use hypertonic lactate solution. Lactate simply forces an increased rate of oxidation. There is more heat formed. In the presence of dehydration there is no way to dissipate the extra heat, and fever will occur.

So the fever already present in our first case became hyperpyrexia in a short time and I think contributed to her death.

In the last case we were at fault in exactly the opposite way. In an effort to avoid the subcutaneous route of fluid administration which often is uncomfortable when children are not in coma, we chose to give everything intravenously, gave it too rapidly, and produced water intoxication as a result.

Therefore, for these reasons and for others that, of course, I haven't time to go into, I would emphasize that one stick to the routine as I have mentioned it: give only the first amount intravenously, and put in the second and larger amount of fluid subcutaneously as a safeguard.

INFANTILE CORTICAL
HYPEROSTOSES*

Charlotte Fisk, M.D., Des Moines

In 1945 Caffey and Silverman¹ and Smyth, Potter and Silverman² reported independently a group of infants as a new syndrome, "infantile cortical hyperostosis." A subsequent series of six patients were reported by Caffey³ in 1946. Whipple⁴ added another record in 1947. This report describes an additional patient with the characteristic findings of this syndrome.

Case Report

J. H. was brought to the Raymond Blank Memorial Hospital on April 19, 1946, at the age of four months, with the complaints of a swollen and tender right forearm for two weeks and a swollen right cheek for one week.

The baby was delivered after a normal gestation period and a labor of one and one-half hours duration. The birth weight was 7 lbs., 15 oz. There was no cyanosis, jaundice or convulsions during the neonatal period. The baby received an evaporated milk formula with supplementary orange juice and cod liver oil. Cereals and vegetables were started at three months. At four months the two lower central incisor teeth had erupted.

The mother was 26 years of age; the father 32 years of age and both reported in good health. There was one sibling, a 4 year old girl, who was in good health. There had been no miscarriages or stillbirths.

The swelling of the right forearm was first noticed two weeks prior to admission. During this two week interval the child was fussy and cried whenever the forearm was moved. During the last week the swelling and tenderness of the right forearm increased and the mother felt that the right cheek was swollen. There was no history of a preceding infection or injury. Four days before admission to the hospital the rectal temperature was 100.2 F.

Examination showed a well developed, well nourished, white male infant of four months of age. He cried whenever his right forearm was moved but did not appear acutely ill. The right forearm was markedly swollen and appeared at least a third larger than the left forearm. The overlying skin of the right forearm was tense, shiny and warm but was not discolored. The right arm, the left forearm and both the lower extremities appeared normal.

The right cheek was swollen and the overlying

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Fig. 1. A. Cortical hyperostosis of the right ulna and radius on April 19, 1946, two weeks after onset of swelling of the right forearm. B. Right ulna and radius on May 11, 1946. C. Regression of the cortical hyperostosis of the right ulna and radius on Feb. 28, 1947.

skin tense. There was tenderness with palpation of the swollen area. The anterior fontanelle was open and measured 1 by 1.5 cm. The posterior fontanelle and sutures were closed. There were no other abnormal physical findings.

The rectal temperature was 101 F. when the baby was admitted to the hospital. The temperature gradually subsided within three days and was not elevated in the six weeks period of hospitalization except on two occasions when the child had an associated upper respiratory infection.

The tuberculin, blastomycin, and histoplasmin skin tests were all negative. Blood agglutination tests for typhoid, paratyphoid A and B, undulant fever and proteus were negative.

On admission the red blood cell count was 3,290,000, the white blood cell count 9,900, and the hemoglobin 10.9 gm. The sedimentation rate was 48 mm. in one hour. The Kahn and Kline serologic tests for syphilis were negative. The vitamin C level of the blood was 0.88 mgs. per 100 cc. The blood culture was negative after both two and seven days incubation.

Several roentgenograms were made. The first picture taken Apr. 19, 1946, showed marked periosteal reaction along the entire shaft of the ulna and the distal two-thirds of the radius with swelling of the adjacent soft tissues. Roentgenograms of the lower extremities were reported as normal.

The films of the right forearm taken eight days

and one month later both showed a greater involucrum. The film of the right mandible showed an area of rarefaction in the ascending ramus. Subsequent roentgenograms of the right forearm have showed a gradual recession of the hyperplasia in both the ulna and radius.

On May 2, 1946, a small amount of fluid was aspirated from the tissues of the right forearm. The smear showed a few pus cells and a few red blood cells. Culture was positive for *Staphylococcus albus*. On May 22, 1946, a biopsy was made from the right ulna. The following report on the decalcified segment of

bone was given: "The main portion of the specimen is composed of spongy bone. The trabeculae of bone are of moderate to narrow width and interlaced with each other to form a honey-comb structure. The trabeculae have a narrow periphery



Fig. 2. Cortical thickening of right mandible April 21, 1946.

of pink-stained, rather homogeneous bone tissue and a central blue-stained fenestrated type of tissue, demonstrated by use of hematoxylin and

eosin stain. The fenestrated central portions contain numerous, often elongated, angular or spindle-shaped cavities in which osteocytes are contained. The marrow spaces are filled with a very loose myxomatous, poorly cellular, type of tissue containing moderate numbers of rather large endothelium-lined vascular channels. Fat cells and hemopoietic cells are not encountered in the marrow."

Since the most probable diagnosis at the time of this patient's admission to the hospital was osteomyelitis, he was placed on penicillin therapy, 120,000 units of penicillin per day. He was given an evaporated milk formula, vegetables and fruit supplemented by 1 teaspoon of homecebrin and 50 mgs. ascorbic acid each day. The swelling of the right cheek disappeared within five days.

Six weeks later when the patient was discharged, the right forearm was no longer tender and was definitely smaller than on admission. It seems improbable that the penicillin therapy or

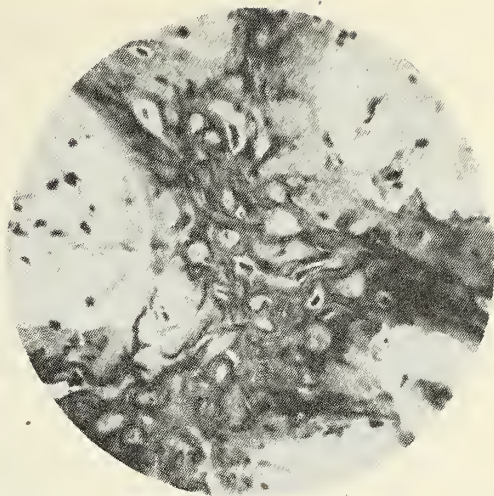


Fig. 4. Photomicrograph of decalcified segment of right ulna. High power magnification.

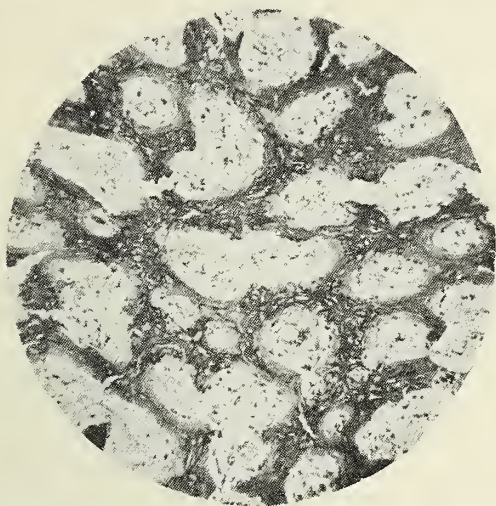


Fig. 3. Photomicrograph of decalcified segment of right ulna. Low power magnification.

the additional vitamins had any effect on the clinical course of this patient.

There has been a continued recession of the swelling of the right forearm and a gradual disappearance of the cortical hyperplasia in the eleven month interval since hospitalization. The growth and development of the child have progressed normally.

Comment

Pyogenic osteomyelitis, syphilis of the bones, neoplastic growth and infantile cortical hyperostosis were all considered as possible diagnosis of this patient. Syphilis of the bone was ruled out by lack of roentgenographic evidence of syphilis and negative serologic tests. Neoplasm of the

bone seemed improbable because of the multiple bone lesions, the good condition of the patient, and his subsequent recovery. The development of a pyogenic osteomyelitis seemed a possible diagnosis; however, the patient did not appear ill enough for either an acute or chronic process. If the extensive involvement of the shaft of the radius and ulna were due to a pyogenic infection, sequestration would have been expected.

The clinical syndrome of infantile cortical hyperostosis which seems the most probable diagnosis of this patient, presents varied findings. The first symptom noted in all patients was the occurrence of tender, soft tissue swellings. Facial swellings developed in all patients where the onset occurred before the fifth month of life. Smyth, Potter and Silverman² reported fibrosis, degeneration and atrophy of the masseter muscle in one patient and degeneration with fatty and fibrous degeneration of the intercostal muscles in another patient.

Subperiosteal cortical hyperostosis may be demonstrated roentgenographically from two to five weeks after the appearance of soft tissue swellings. The bones commonly affected are those adjacent to the soft tissue swellings although other areas may be involved. Hyperostoses have developed in the calvarium, mandible, clavicles, scapulas, ribs, and the long bones of the extremities. The bony changes persist months after the soft tissue swellings have subsided.

Other clinical findings of the syndrome which do not occur in all the patients include fever, pseudoparalysis, anemia, leukocytosis, and an increased sedimentation rate. The duration of symptoms has varied from eight weeks to nine months.

The cause and pathogenesis of this syndrome are still unknown. The disease apparently runs its course regardless of the therapy used. There is no evidence that either the sulfonamides or penicillin have been of therapeutic value. All the patients have recovered.

Summary

An additional case of infantile cortical hyperostosis is reported. This condition developed in an infant at the age of four months. The initial symptoms were soft tissue swelling of the right forearm and right cheek and a pseudoparalysis of the right forearm. Roentgenograms showed subperiosteal hyperplasia of the right ulna and radius and the right mandible. A segment of bone was removed from the right ulna and report made of the decalcified sections. The patient made a gradual recovery regardless of the therapy used.

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PROPYL THIOURACIL IN THE TREATMENT OF HYPERTHYROIDISM

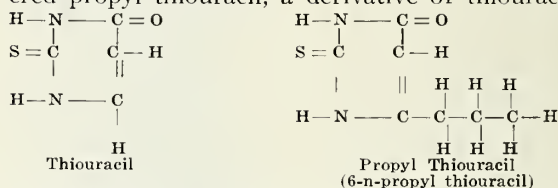
E. Thomas Scales, M.D., Des Moines

Today there are three relatively good approaches to the treatment of hyperthyroidism—surgical removal of part of the gland, the administration of radioactive iodine or the thiouracil group of drugs. Any one or a combination of any of the above types of treatment may be indicated in an individual case. The ideal type of treatment of the thyrotoxic patient would be one that is effective, without danger, generally available to everyone and inexpensive as to cost of medicine or loss of work while receiving treatment. Propyl thiouracil more nearly meets the above standard than either surgery or radioactive iodine. The purpose of this communication is to discuss the action of propyl thiouracil in control of hyperthyroidism, to outline the usual management of the thyrotoxic patient with it and report my observations of its usage in 14 cases, treated at Broadlawns General Hospital and in my private practice.

Propyl thiouracil used in the treatment of these cases was furnished through the courtesy of Dr. Stanton M. Hardy of Lederle Laboratories.

From the Endocrine and Metabolic Services, Broadlawns General Hospital Des Moines, Iowa.

After studying the antithyroid action of some 300 drugs, Astwood¹ and his co-workers discovered propyl thiouracil, a derivative of thiouracil.



He reported it to be a potent thyroid depressant and unlike its predecessor, thiouracil, relatively nontoxic. Both laboratory and clinical investigation throughout the country have confirmed Astwood's original contention. T. H. McGavack, A. J. Gerl, Mildred Vogel and Seymour Schutzer² reported one toxic reaction in 75 cases treated at New York Medical College. Since this report, Gerl³ has observed a case of agranulocytosis due to propyl thiouracil. Bartels⁴ has reported three toxic cases resulting from its usage. There have been no toxic reactions in the author's cases. In some cases the leukocytes count dropped to 4,000 or 5,000, there remaining throughout the treatment.

Mode of Action

The mode of action of the thiouracil group of drugs in producing their depressing action on the thyroid gland is not definitely established. It is thought that the thioureas prevent the oxidase, present in the thyroid tissue, from converting the iodides to iodine or that the thioureas unite with iodine in the thyroid gland. In either case there is a decreased amount of iodine present which is the form necessary to synthesize diiodo-tyrosine from which the thyroid hormone is made. Thus, less thyroid hormone is formed. This reduction of thyroid hormone causes a lowering of metabolism and amelioration of other symptoms of hyperthyroidism.

Astwood et al.^{1,5} found that propyl thiouracil was ten times as active as thiouracil in rats. This is not true in man.^{1,11} This greater activity of propyl thiouracil resulted in too small dosage being given in the early treated cases. Some of the failures recently reported are likely due to too small initial dosage.⁶

Treatment

Although very few cases of toxic reactions have been observed in the usage of propyl thiouracil in treating cases of hyperthyroidism, we must bear in mind that this is potentially a dangerous drug. It should be administered with the same caution as used with any other powerful medication. Basal metabolic rate, fasting blood cholest-

terol, blood count, weight, pulse, blood pressure, and size and consistency of the thyroid gland should be noted before the drug is administered. These observations will be used to determine the progress of treatment. The severe toxic hyperthyroids, or those patients who have previously received iodine, will require larger initial doses than the milder cases or those who have not previously received iodine. The severe case should be given 250 to 300 mgms. of propyl thiouracil daily. We give 100 mgms. every eight hours. Blood counts should be done at least weekly during the first month of treatment. Astwood and VanderLaan⁷ no longer consider it necessary to do these blood counts. We advise our patients to discontinue the drug and notify me or the hospital immediately if evidence of sore throat. A white count is done to determine the presence or absence of leukopenia. If the white count is within normal limits or increased, we know that there is no toxic reaction to the drug and propyl thiouracil is continued as before. We have seen no cases of sore throat due to propyl thiouracil.

The less severe cases and those not having received iodine are given 100 to 150 mgms. of propyl thiouracil daily. It is best given in divided doses, either 50 mgms. every twelve hours or 50 mgs. every eight hours. The initial dosage in either the severe or mild thyrotoxicosis is continued until all manifestations of hyperthyroidism have disappeared. The usual case will respond in from two to eight weeks. Some cases, especially those in the severe toxic or iodide group, require from four to six months for disappearance of their thyrotoxic symptoms.

The clinical improvement of the patient can be guided by observing the attitude and behavior of the patient, the weight gain, the pulse pressure, the pulse rate, the amount of tremor and sweating. The laboratory will show a gradual lowering of the metabolic rate and an increase in the blood cholesterol.

If the patient is getting too much propyl thiouracil he will become sluggish or drowsy. There will be a rapid gain in weight. The thyroid gland will increase in size rapidly. The blood cholesterol will go up. This latter event may be very significant in that cholesterol may go up to a point above 300 mgms. per cent while the metabolic rate is still high. The metabolism may suddenly drop to hypothyroid or myxedematous levels. When the patient's symptoms have returned to normal, he is placed on a maintenance dose of 50 to 100 mgms. a day. This is continued for six to eight months. Occasionally the individual case may require slightly more or less than the amounts given above, to keep him normal. At

the end of six to eight months, propyl thiouracil is withdrawn. Many patients will remain in the state of remission after this regimen of treatment. If hyperthyroidism is to recur, symptoms will be noted usually within thirty to forty-five days after withdrawal. Should there be a relapse, begin at the maintenance dose and give propyl thiouracil for another four to five months, then withdraw again.

Prognosis

Various groups give widely different percentages of cures following the usage of the thioureas. Astwood⁸ thinks possibly 80 per cent will remain permanently arrested. Other groups give percentages varying from 39 per cent to 70 per cent.⁹ Williams¹⁰ reported 49 per cent without recurrence of symptoms. The author has not used it long enough to give a substantiated percentage of cures. The duration of the treatment seems to be an important factor in preventing recurrences. However, this is not an invariable rule as one of my cases has remained symptom free after two months of treatment.

Comments and Summary

Propyl thiouracil is an effective drug in the treatment of a large percentage of hyperthyroid patients. It is generally available and does not require hospitalization for usage. It is relatively nontoxic in therapeutic doses. A discussion of its usage in the management of the average case of hyperthyroidism is given. It is concluded that propyl thiouracil is an excellent aid in the control of the thyrotoxic patient. No claim is made that it will supplant surgery or radioactive iodine in all cases but it may be combined with either one or both as an individual case may require.

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ONE STAGE RESECTION OF THE SIGMOID COLON WITH PRIMARY END-TO-END ANASTOMOSIS FOR MALIGNANCY: CASE REPORT*

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Making remarkable strides in the last few years, colon resection now occupies an enviable position in the surgical world. This is especially significant because the colon is an organ that is not blessed with those two great virtues that every surgeon cherishes: a rich blood supply and freedom from bacterial contamination. Frequent fatal infections were the rule only a few years ago. Yet, peritonitis is now not the fearsome figure that it was, for mortality rates have dropped from about 20 per cent for the easily performed Mikulicz exteriorization operation to lower than 4 per cent that now prevails in the most technically difficult surgical procedures on the colon.

Several factors play a part in this lowered mortality. Undoubtedly, better preparation of both patient and the colon with the use of blood transfusions, repeated irrigations and succinylsulfathiazole, is most important. Yet, we must not forget that surgical technics have advanced greatly, particularly because of recent outstanding contributions to the knowledge of the anatomy and pathology of the pelvic colon. It is still believed by some that ligation of the superior hemorrhoidal artery results in disaster for the lower part of the colon, and yet Dixon has thoroughly disproved this belief. In his anterior segmental resection of low lying colonic lesions, he has demonstrated that adequate blood supply can come from the marginal and sigmoidal arteries alone, and that the rectal segment is well nourished by the middle and inferior hemorrhoidal arteries alone. This knowledge has facilitated resection of the lower colon with direct end-to-end anastomosis in many cases, thereby avoiding the removal of the entire rectum and the establishment of a permanent colostomy.

Brilliant studies by Collier and Kay, Gilchrist and David, Glover and Waugh, and others have shown that lymphatic spread from malignant rectal lesions is almost always upward, and that removal of only a two centimeter cuff of bowel below the lesions permits just as radical an operation as does complete removal of the rectum by an abdomino-perineal resection. These facts have permitted resection of low lying carcinomas with

preservation of the lower rectum and the anal sphincter with no compromise of curability. It is by taking advantage of this situation that Babcock and Bacon have popularized the sphincter saving abdominoperineal operation and that Dixon has developed the anterior resection. However, in the anterior resection or in similar operations, it is generally the custom to preserve the integrity of the anastomosis until healing has taken place by establishing a proximal colostomy or other vent to side-track the bowel current, thus making a two or three stage operation. It is the elimination of this proximal vent that receives most consideration in this paper.

A recent surgical advance has been the execution of a one stage resection and end-to-end anastomosis without a proximal colostomy or opening. Waugh, Wangenstein, and Meyer have pioneered this procedure, and their results have been excellent. About 150 cases of this type have been reported in this country, although probably many more have been done. Even though details of the operation have varied, results have been comparable. Mortality has been below 4 per cent regardless of the type of anastomosis, whether it be the open or the closed type, and regardless of the type of proximal and distal decompression of the bowel by various indwelling tubes. Although new, this procedure is certainly no surgical fad or passing fancy. Its advantages, particularly in eliminating the risk of a second operation, in lowering morbidity, and in shortening hospital time, are obvious. It seems well on its way in becoming an accepted surgical procedure.

Importance of Diagnosis

Diagnosis can never be emphasized too much. Far too many colonic carcinomas are still being overlooked. How can patients benefit by new procedures, better preparation, and lower mortality, if their malignant disease is not detected early enough? Since about two-thirds of all malignant lesions of the colon are within reach of the examining finger, every patient with constipation, rectal bleeding, or any intestinal complaint should receive as a bare minimum a thorough digital examination of the rectum. It takes only a few seconds to make a rectal examination, and even if one has to examine one hundred people before a carcinoma is found, it is certainly worth-while to have directed that one case to proper treatment. This is the only way that earlier, operable cases will be discovered.

If no lesion is felt rectally, diagnostic measures must include a careful sigmoidoscopic examination and roentgenologic investigation, if neces-

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†I wish to express my appreciation to Dr. W. W. Daut, who referred the patient for treatment, and to Dr. E. H. Carlson, who conducted the proctoscopic and roentgenologic investigations.

sary, until the absence of a malignant lesion is definitely proved. The diagnosis of cancer is very easy after the patient develops large, hard, tumor masses in his liver or abdomen, a protuberance from ascites or extreme emaciation; it is much more difficult to pick up an early operable lesion

Waugh, incorporating features of both.

A low left rectus incision was used. The liver and upper abdominal viscera were then carefully palpated to detect any distant metastasis. The lesion itself was next examined to see if it were removable.

The patient was placed in Trendelenburg position to achieve better exposure and the small bowel was packed off. In mobilizing the bowel, the medial and lateral peritoneal reflections were first incised, carefully isolating and identifying both ureters, and then the peritoneum across the base of the bladder was divided. Ligation of the superior hemorrhoidal artery and vein was carried out next and the mesocolon was clamped and ligated. Care must be exercised in ligating the superior hemorrhoidal vessels so that the point of ligation is distal to the origin of at least one of the sigmoidal arteries and the proximal bowel segment will be adequately nourished (figs. 1 and 2).

Next, the pelvic colon, together with all of the adjacent tissue containing lymph nodes, was mobilized by passing the hand into the hollow of the

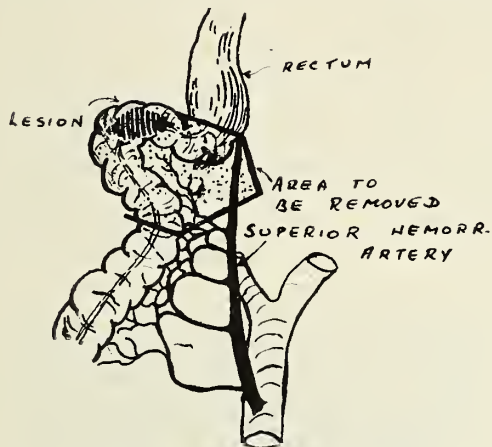


Fig. 1. Ligation of the superior hemorrhoidal artery just distal to the origin of the sigmoidal arteries and the segment of colon to be removed.

by thoroughly investigating suspicious symptoms in a patient who is in good general health otherwise.

Preoperative Preparation

The colon must be as clean as possible and bacterial contamination should be reduced to a minimum to insure satisfactory healing of the primary anastomosis and proper convalescence of the patient. Credit must be given to the nursing personnel in their diligent efforts to cleanse the colon by giving repeated enemas.

The important features of this preparation consist of: (1) placing the patient on a low residue diet for four days prior to operation; (2) the oral ingestion of succinylsulfathiazole in the amount of two grains six times a day; (3) oral administration of sodium phosphate; (4) repeated cleansing irrigations of the colon twice daily; and (5) administration of paregoric 24 hours immediately preceding the operation to minimize activity of the bowel.

Since Meyer and others have shown that most patients with cancer of the colon have varying degrees of anemia and hypoproteinemia, the writer feels that every patient should receive at least one thousand cubic centimeters of whole blood before the operation and more if necessary.

Technic of Operation

The technic used by the writer in this case closely followed those described by Dixon and



Fig. 2. Drawing showing ligation of the superior hemorrhoidal artery and mesentery and the mobilization of the lower colon. (From Dixon, C. F.: Anterior resection for carcinoma low in the sigmoid and rectosigmoid. Surgery (March) 1944.)

sacrum and lifting the structures. This was an important stage of the procedure, for here the surgeon must decide whether he must proceed with a classical combined abdominoperineal re-

section or whether the lesion has been mobilized high enough to allow segmental resection with anastomosis. Rubber covered clamps were applied above and below the lesion in the now mobile colon, and the segment bearing the lesion along with a generous portion of mesentery, was removed.

End-to-end anastomosis can be done either by the closed or open method. Waugh favors the closed, aseptic type, using the three-bladed crushing clamp, and has had excellent results with it. Dixon, Meyer, and others prefer an open anastomosis. The writer decided that an open anastomosis could be done in this case with greater facility, so this was performed, using two rows of sutures anteriorly and posteriorly. First, a row of interrupted catgut sutures was placed posteriorly, going through all layers of the bowel; then a similar anterior row was placed, re-establishing continuity of the bowel. Finally, a row of closely placed interrupted silk sutures was placed completely around the anastomosis, inverting the tissue and peritoneum (on the proximal segment) by means of a horizontal mattress suture, making an accurate and snug anastomosis.

Finally, 5 gm. of crystalline sulfathiazole were sprinkled around the anastomosis and then the peritoneal leaves were sutured to the lateral and medial sides of the colon to form a reconstructed pelvic floor. To decompress the bowel, a large rectal tube was passed up the rectum from below and threaded past the anastomosis. Two Penrose drains from the anastomosis site were brought out through a stab wound in the flank. The abdomen was then closed in layers.

No proximal colostomy was found necessary, for as Waugh pointed out, if there is no obstruction, if the bowel is clean and free from contamination, and if an accurate anastomosis is done, then a proximal vent need not be made.

Postoperative Management

Obstruction phenomena at the anastomosis are eliminated by leaving the large rectal tube in place for seven to ten days. This allows passage of gas and liquid stool until the edema at the anastomosis has subsided and some healing has occurred. Although the tube may need occasional irrigation to keep it open, this is no problem. Its value as a protector of the suture line is great.

Administration of intravenous sulfathiazole in 5 gm. doses daily and oral succinylsulfathiazole with enough water to swallow it should be continued for several days. Streptomycin can be used quite effectively if available and it may replace sulfathiazole eventually.

Other fluids by mouth are withheld until flatus

is freely expelled. Residue-free liquids and solids are then employed, and continued for the first week of feeding. A low residue diet is then followed for about two months.

Nasal intragastric suction should be used if appreciable abdominal distention occurs to prevent dilatation of the colon and consequent damage to the suture line. In most cases, however, it will be unnecessary.

Whole blood transfusions should be given at the slightest indication in the postoperative period, for there is still no substitute for blood in improving the patient's condition generally, in preventing shock, and in encouraging healing of the anastomosis. For the same reasons, and particularly to promote healing, large amounts of vitamin C and vitamin B complex should be given parenterally. It must be remembered that the patient will not be on an adequate diet for over a week, and what a tragedy it would be to spoil a good operation by bad after-care in letting malnutrition develop at the site of the operation!

Case Report

The patient was a white woman, aged 57 years, who had a history of rectal bleeding and progressive constipation for several months prior to the time of her examination on Mar. 7, 1947. There had been only a few pounds loss of weight. She had had some abdominal discomfort, but there had been no colicky pains, vomiting or distention suggestive of obstruction. She also complained of

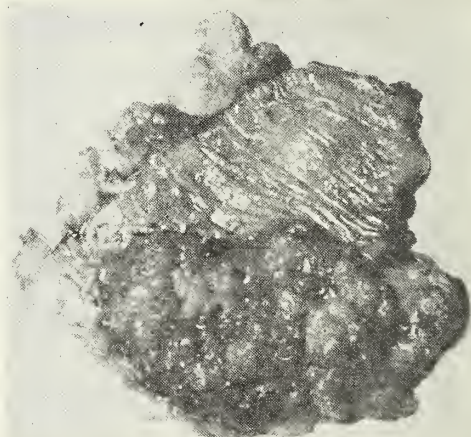


Fig. 3. Colon roentgenogram showing almost complete obstruction to the retrograde flow of barium in the region of the rectosigmoid.

pain and swelling of both knees, previously diagnosed as osteoarthritis. Her appetite and digestion had been good.

Physical examination showed a well developed, rather obese woman, apparently in good health. Both knees were swollen and painful on motion. The abdomen was soft and flabby and there were no masses or tenderness. Although rectal examination showed moderate external hemorrhoids, no neoplastic lesion could be felt. Blood studies showed 84 per cent hemoglobin and 4,250,000 red blood cells per cubic millimeter.

Sigmoidoscopic examination showed a large, friable, easily bleeding, typical, polypoid carcinoma at about 15 cm. from the dentate line. Colon roentgenogram showed almost complete obstruction to the retrograde flow of barium in the region of the rectosigmoid (fig. 3).

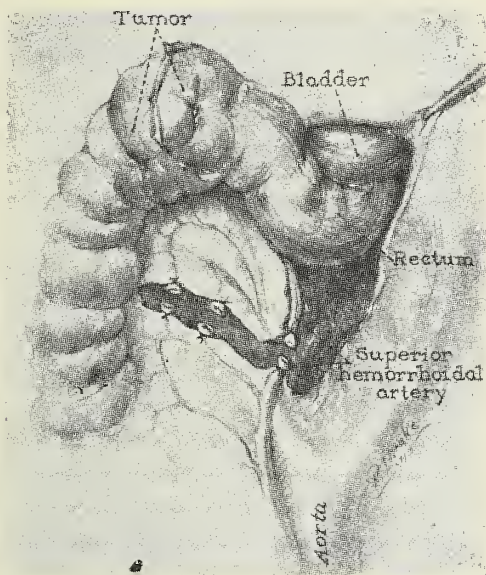


Fig. 4. Large polypoid carcinoma of the sigmoid almost completely encircling the lumen of the bowel. There is a two-centimeter cuff of normal bowel extending below the lesion.

After four days of medical preparation with succinylsulfathiazole, colonic irrigations, sodium phosphate, and a transfusion of 1,000 cubic centimeters of whole blood, the patient was explored on Mar. 13, 1947. In the sigmoid colon there was a freely movable mass about the size of an orange that looked and felt like a typical malignant tumor. There was no gross involvement of the regional lymph nodes or the liver.

Anterior resection of the lower sigmoid and rectosigmoid was done with complete removal of the lesion and the regional lymph nodes. An end-to-end, primary, open anastomosis was done after first enlarging the lumen of the sigmoid colon so that it could be accurately approximated to the rectum.

Pathologic examination of the lesion showed a

large, polypoid, grade 1 adenocarcinoma of the sigmoid colon with almost complete obstruction, and without involvement of the regional lymph nodes (fig. 4).

Postoperatively, intramuscular penicillin and intravenous sodium sulfathiazole were given for four consecutive days. Intra gastric suction was started on the second postoperative day and was continued for four days, although at no time was much abdominal distention present. The rectal tube was irrigated daily, and after gas bubbled through it freely on the fourth day, small amounts of water were given by mouth. This was progressively increased, as tolerated, until the patient was on a low residue diet. The rectal tube was removed on the eighth postoperative day, particularly because the patient's hemorrhoids were so painful. With the help of milk of magnesia, the patient had an average of two formed stools a day, beginning with the eleventh postoperative day.

The patient was dismissed from the hospital on the fifteenth postoperative day, feeling well, and has remained well since, having an average of one soft, formed stool a day.

Summary and Conclusions

Primary end-to-end anastomosis of the sigmoid colon after resection for a carcinoma was successfully performed without a colostomy in one case. No claim to priority is made. However, it seems worth-while to call attention to a newer trend in colon surgery.

Although the importance of earlier diagnosis is obvious, there is still a high rate of inoperability in cases coming to surgery, probably because either the patient goes to the doctor too late, or enough rectal and proctologic examinations are not being done.

The need for proximal colostomy and two-stage operations is obviated by the use of succinylsulfathiazole and better preparation of the patient.

Revised anatomic and pathologic concepts of the pelvic colon have eliminated the need for an artificial anus in many cases.

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RECENT ADVANCES IN OPHTHALMOLOGY

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Taking up "new advances" from the standpoint of external diseases first, as Thygeson has so well brought out in his articles in the *Journal of the American Medical Association*, *The Archives of Ophthalmology*, and the *American Journal of Ophthalmology*, many of our blepharo-conjunctivitis stem from the lids, or more specifically from the glands of the lids. These glands act as a reservoir for infection, and many cases only appear to get well, then have a relapse. He suggests that the use of a glass rod and massage of lid margins is one of the ways, and perhaps the best, in aiding the elimination of the infection. This point is not new, but it is one that has been overlooked for some time, and it is well that it is brought to our attention. The author has used it with good results.

It can be added at this point that the use of penicillin has eliminated many of the complications previously seen from conjunctivitis and keratitis. A point, however, I wish to add is that the unguent penicillin should not be used, but rather a solution of 1,000 units per cubic centimeter is recommended in ulcers of the cornea, especially those of traumatic origin. The reason for this is that the ointment inhibits the growth of corneal epithelium. Personal experience has borne out this observation.

Chronic dacryocystitis is also a problem, but one that can be aided through the use of surgery. The method is up to the surgeon, but one should re-establish communication between the sac and the nose, as that is the normal physiology.

Iridocyclitis is the one inflammatory disease of the eye that has not changed much as far as cause and treatment are concerned. It is to be stressed again and again that one should try to eliminate all foci of infection. The use of penicillin parenterally is used even though one may feel that he is using it empirically. In those cases that develop a hypopyon, either from a corneal ulcer or an iridocyclitis, one can evacuate the anterior chamber and inject penicillin solution—1,000 units cc. This is done by the use of a sharp hypodermic needle and syringe. The one danger to be avoided is that of injuring the iris and the lens.

Personal experience has shown that the hypopyon disappears within twelve to twenty-four hours. It is drastic, but such a procedure is necessary if an eye can be saved by incorporating it as part of the treatment.

Cataract surgery has not had any basic changes. It depends more on the operator who usually perfects his own technic. Some men prefer the use of the arisophake, either motorized or that of Dimitry of New Orleans. The discussion as to whether it should be removed intracapsular or extracapsular goes on, but it depends upon the operator and the patient. The one procedure that is of value is that of some type of corneoscleral suture. It has made corneal sections much safer. Some men are advocating the use of keratome incision and enlarging the incision with corneal scissors. Again it depends upon the surgeon.

As to hemorrhage into the vitreous—one of the latest ways of combating this is to draw off the hemorrhagic vitreous and replace it with vitreous from a globe from an eye bank. This is drastic means again and is best suited in those centers where eye banks are available.

Diseases of the retina are about the same as far as treatment is concerned. In those cases of embolism of the artery and thrombosis of the vein, "dicumarol" has been used. This can be done if the patient is watched as to bleeding, coagulation, and prothrombin time. Results are in inverse ratio to the length of time following the vascular accident.

Retinal detachment is still the "bugbear" that it has been. Traumatic types yield best to diathermy coagulation. The results of reattachment are still low as far as useful vision is concerned. Dr. Peter Kronfeld has suggested in these inferior and superior quadrant detachments that extend almost to the macula that the multiple puncture method be used at the insertion of the inferior oblique, one row of 4-6 punctures parallel to the insertion and 4-6 punctures perpendicular to the outer edge thereof. This is an aid in stopping the detachment short of the macula. Using the superior oblique in superior quadrant detachments can be handled in much the same way. It has also been applied in those detachments where there is a hole in the macula.

For foreign bodies in the vitreous of the magnetic type or those of nonmagnetic type that can be seen to be removed, diathermy is used around the posterior scleral wound. Also, a suture is used and an "L" shaped incision is used. Personal experience indicates that there is less vitreous lost, and the diathermy aids in precluding a retinal detachment.

In infections of the orbit, penicillin and chemo-

therapy have reduced the incidence of mortality and morbidity of such cases; in fact, the number of cases seen today are much less and usually due to neglect.

We cannot leave out psychoneurosis. We all see many cases in which no positive organic diagnosis from an ophthalmologic standpoint can be made. As a result we many times send the patients on their way without having helped them. We also know that a diagnosis of psychoneurosis is abstract. The author wishes to introduce at this time a tangible piece of evidence that is of value both to the ophthalmologist and to the neuropsychiatrist — namely, the “psychogenic” color field. The author published a paper on this subject in the *American Journal of Ophthalmology*, April, 1944. The details of the procedure are in that article. Suffice it to say that no known organic disease of the eye will produce an interlacing or inversion of the color fields. Since the previous paper about 100 more cases of psychoneurosis have been examined and all degrees of interlacing were found.

Migraine headaches are another “bug-bear.” All of us have had such patients, and the treatment shows that nearly everyone uses his own ideas. Neostigmine should be used by giving 1 drop first dose and adding 1 drop each dose until ten are reached. This is continued for one week and is supplemented by riboflavin 5 mgm t.i.d.

College of Medicine
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**CLINICOPATHOLOGIC
CONFERENCE**
November 8, 1947

Summary of Clinical Record

A 66 year old male was admitted to the University Hospital on Feb. 25, 1947, complaining of frequent and painful urination and urinary incontinence. The patient was disoriented on admission and during his whole stay in the hospital was unable to give a satisfactory history. His referring physician stated that the bladder symptoms had been present for the past ten years, and that his right knee had been painful and swollen for the same length of time.

On physical examination the patient appeared to be a well-developed, thin, white male, disoriented as to time and place, but not acutely ill. He had diminished audiscuity. His pupils were

very small, did not respond to light, and responded sluggishly to accommodation. There were sibilant rales in both lung fields and moist rales at the bases. The heart beat was irregular. The blood pressure measured 180/100. The examination of the abdomen was negative. The prostate was moderately enlarged. There was limitation of motion in both hip joints. The right knee was quite swollen and covered by tense, shiny skin. There was an ununited fracture in the right supracondylar region which was not tender or painful on motion. The circumference of the right supracondylar region was 9 cm. greater than that of the left. There was generalized hypoflexia and hypotonia. The pain sensation over the shins was decreased.

Laboratory findings were as follows: urine specific gravity, 1.017; pH 9.5; albumin and sugar negative; erythrocyte count 4,810,000 per cu. mm.; leukocyte count 15,800 per cu. mm.; hemoglobin 9.5 gm. per 100 cc. The blood urea nitrogen was 18 mg. per 100 cc.; blood calcium was 9.5 mg. per 100 cc.; serum phosphorus 3.4 mg., N. P. N. 53 mg.; creatinine 1.5 mg. Pandy's test on the spinal fluid was negative. There were 3 leukocytes per cu. mm. in the spinal fluid. The Wassermann and Kline reactions of blood and spinal fluid were negative.

Roentgenograms of the right knee showed an ununited, old supracondylar fracture with severe bone destruction and new bone formation. An anteroposterior film of the chest showed a fracture of the right seventh rib at the posterior axillary line. The lung fields appeared clear, and the contour of the heart and great vessels showed a tortuous aorta. The roentgenograms of the pelvis showed evidence of bilateral hypertrophic arthritis of the hips. Cysto-urethrograms showed the bladder to be normal in outline and size. There was no evidence of bladder neck obstruction.

On March 8, 1947, a suprapubic cystostomy was performed, and the patient was transferred to the Department of Orthopedics. His general condition was poor; he coughed a great deal and moist rales were very abundant at both bases. No treatment of the supracondylar fracture was attempted before his death on April 19.

Clinical Diagnosis

Tabes dorsalis with a Charcot fracture.

Necropsy Findings

The region of the right knee was greatly enlarged. It measured 48 cm. in circumference whereas the left measured but 31.5 cm. This enlargement resulted from a large mass of neoplastic tissue which replaced the distal end of the right femur (fig. 2). A large tumor pro-

truded posterolaterally from the lateral condyle of the femur. There was a pathologic fracture through the mass and the femoral cortex above the condyles. Much of the tumor was softened and necrotic, and there was no evidence of neoplastic bone formation. The joint surfaces were not involved by the neoplasm.



Fig 1. A lateral view of the right showing pathologic supracondylar fracture with bone destruction and fragmentation.

The tumor was composed of numerous neoplastic fibroblasts which had formed many sheets and bundles of collagen (fig. 3). The primary focus was not especially cellular, and there were few giant forms or mitotic figures. Two sites of metastasis were found. One of these, in the seventh rib on the right side, had produced another pathologic fracture. The other site was in the lung where a 2 cm. nodule of white, firm tissue was located just beneath the pleura of the mediastinal border of the left lower lobe. It appeared to be well circumscribed grossly, but could be seen to be spreading peripherally in microscopic sections. The metastases were far more cellular than the primary, and the mitotic figures and bizarre forms were much more numerous.

Another important lesion was advanced atherosclerosis of the aorta, with rupture of the intima and a dissecting aneurysm of the abdominal portion. This aneurysm appeared to be quite recent and extended for a short distance into the

right common iliac artery. There was diffuse lobular pneumonia throughout both lungs. A 5 mm. perforation of the midportion of the nasal septum was noted.

There was mild thickening and translucency of the leptomeninges over the convexity of the cerebral hemispheres. This process extended down onto the spinal cord, and the dura was adherent in the cervical and dorsal regions. At the level of the lumbosacral junction the gray matter of the cord was softened and necrotic. This process was bilateral but was less severe on the left side. In the sacral region the softening was much more severe and even involved some of the white matter. It extended into the conus medullaris and appeared to be rather recent in origin. A recanalized thrombus was found in the anterior spinal artery (fig. 4). One small area of encephalomalacia was found in the left internal capsule of the brain. There were numerous calcareous plaques beneath the dura of the cord.

There was a recent suprapubic cystostomy in the bladder with a Pezzer's catheter in place. The bladder mucosa was hemorrhagic and edematous. The prostate was small, firm and symmetrical. Microscopically it showed hyperplasia. The right kidney was displaced inferiorly so that its lower pole was at the pelvic brim. It was rotated so that the pelvis was anteriorly located and the whole organ flattened in its anteroposterior diameter. A small nodule, well encapsulated and filled with caseous debris, occupied the superior pole of the right epididymis.

Incidental findings included chronic cholecystitis with cholelithiasis and diverticula of the duodenal and jejunal portions of the small intestine. The latter was a classic Meckel's diverticulum. The appendix was acutely inflamed.

Necropsy Diagnosis

Fibrosarcoma, involving right femur with metastasis to lungs and right seventh rib.

Pathologic fractures, right femur and right seventh rib.

Arteriosclerosis, generalized, severe, with dissecting aneurysm of abdominal aorta.

Lobular pneumonia, acute, bilateral.

Thrombosis, anterior spinal artery.

Myelomalacia, lumbosacral, and encephalomalacia.

Chronic adhesive meningitis, cerebral and spinal.

Perforated nasal septum.

Congenital diverticula, duodenum and jejunum.

Decubitus ulcers, skin over scapulae, sacrum, trochanters and heels.

Hyperplasia of prostate.



Fig. 2. Frontal section, low extremity right femur: pathologic fracture, fibrosarcoma with invasion of marrow canal.

Ectopic right kidney.

Chronic cholecystitis with cholelithiasis.

Cardiac hypertrophy and dilatation.

Dr. I. Ponseti (Orthopedic Surgery): The patient was quite ill, very disoriented and stuporous when he was admitted to the orthopedic service. He had bronchopneumonia with a daily high temperature. He had a tumor in the supracondylar region of the right thigh, just above the knee. This thigh measured about three inches more in circumference than the left. He had a fracture at the site of the tumor and the leg could be moved in any position without complaint of pain by the patient. The roentgenographic examination showed an osteolytic lesion of the femur in that area and a fracture with much bony sclerosis and fragmentation through the lesion. This, together with the fact that the patient had what clinically was called tabes dorsalis, made us very suspicious that the lesion in the lower end of the femur was a Charcot fracture. About 20 per cent of the patients with Charcot joints, seen in our service, have pathologic fractures.

We had to consider the swelling over the fracture area. There is usually some swelling over a Charcot fracture, but this patient had an unusually large mass at the fracture site. In addition, as can be seen in the x-rays, there was much more osteolysis than we usually see in Charcot fracture. We thought that the fracture might have been due to a tumor in that area which had weakened the bone or to a gumma in the bone. The fracture site was painless, and because of that, the leg had been moved around and the patient possibly walked on the fractured leg with consequent production of bone in greater amounts than is usually seen in any purely osteolytic le-

sion. Gumma, however, was not seriously considered because the patient's serum showed negative Wassermann and Kline reactions. In addition, we do not see such extensive destruction of bone in syphilis as this patient had. The second best bet in a patient 66 years of age was a metastasis from a carcinoma. The lesion was situated in the lower end of the femur, however, which is an unusual site for a metastasis. Usually metastases in the femur occur above the area where the nutrient artery enters the bone. What other type of tumor could have produced such a destructive lesion? Hypernephroma usually produces a single metastasis, but the urologic examination revealed no hypernephroma. Furthermore, the osteolytic lesion did not come from inside the bone. The bone was destroyed more in the periphery than in its center. For this reason it was probably not a metastatic lesion into the femur. It must have originated in the surrounding tissues, and a tumor from the surrounding tissues in a patient of this age is usually a fibrosarcoma.

Our diagnosis then was tabes dorsalis with a Charcot fracture and a great deal of osteolysis in the Charcot fracture site. This was probably due to a neoplasm, most likely a fibrosarcoma.

The patient was not treated for this lesion because he was very sick, and we were waiting to see if his general condition improved before we did anything for the fracture. However, his health did not improve, and he died four weeks after his admission to the orthopedic service.

Dr. Carl L. Gillies (Radiology): The film of the lower end of the femur shows the pathologic fracture (fig. 1). There is considerable sclerosis, fragmentation and bone destruction. As Dr. Ponseti has already pointed out, this occurs with Charcot fracture, particularly with respect to the amount of sclerosis, new bone formation, and fragmentation seen here. Charcot, in his original description, attributed these changes to trophic nerves. Eloesser, in his experiments on cats in

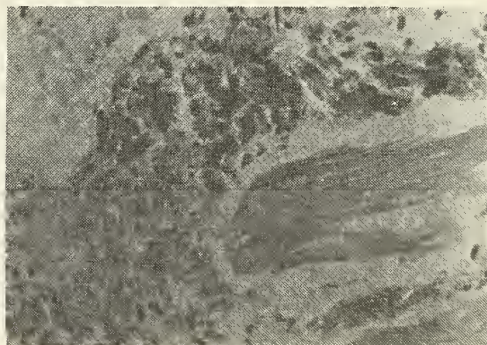


Fig. 3. Neoplastic cells invading cortical bone.

which he sectioned the posterior or sensory roots, was able to produce typical Charcot joints and Charcot fractures. He is convinced that the production of the deformities is due to the loss of the warning sense of pain alone and that the so-called trophic nerves are nonexistent. Any fracture that is improperly immobilized will show an overgrowth of callus, and in the absence of the sense of pain or with a diminution of the sensation of pain, there will be even more callus and more fragmentation than there would be in a simple fracture with incomplete immobilization.

It has been shown by clinical counterparts that other things besides locomotor ataxia will produce a loss of sensation in the extremity. Syringomyelia, transverse myelitis from trauma, peripheral neuritis due to trauma to a peripheral nerve, section of a peripheral sensory nerve, leprosy or the neuritis of diabetes may produce loss of sensation. We thus accounted for the overgrowth of bone and the fragmentation associated with pathologic fracture. Of course, the neurologists' diagnosis of tabes dorsalis seemed to substantiate our own diagnosis, and I might say that even the pathologists at the autopsy concurred with our diagnosis of a Charcot fracture.

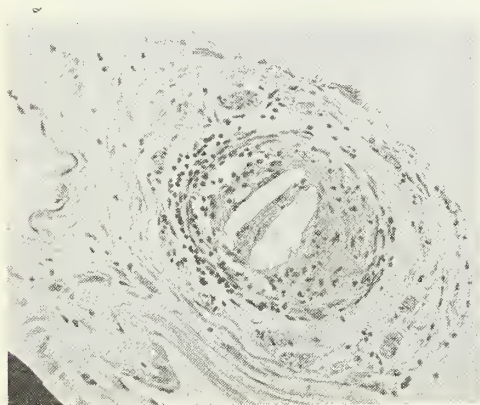


Fig. 4. Recanalized thrombus in anterior spinal artery.

Dr. C. H. Millikan (Neurology): When I examined this man, I found him disoriented, hallucinated and delirious. He was obviously psychotic and elicitation of any kind of an adequate history was impossible. You have noted from the protocol some of the positive physical signs. First, he had small pupils which responded slowly or sluggishly to light but fairly well to accommodation. This sign does not necessarily mean neurosyphilis. He had a perforated nasal septum, a blood pressure of 180/100 and absent reflexes in the lower extremities. He had hypotonia without evidence of pyramidal tract involvement in the form of positive plantar extensors.

As far as the diagnosis of his psychotic state is concerned, there were a number of differential possibilities; arteriosclerosis, senility, vascular accident to the brain, deficiency state or toxic disorder such as bromide poisoning or morphine ingestion. Alcohol could have produced the psychosis. Neurosyphilis, of course, could also produce such a psychotic syndrome. In addition, malignancy, either metastatic or primary in the nervous system, had to be considered, and such infectious or inflammatory diseases as encephalitis and meningitis. In most instances elderly people are psychotic due to a combination of causes. There may be arteriosclerosis with or without hypertension plus some somatic disease. These patients may have uremia. We finally decided that this particular psychosis was due to a combination of arteriosclerosis plus some other factor, possibly uremia. We were not able to carry diagnostic differentiation any further.

The findings obtained in the examination of the lower extremities presented us with a number of diagnostic possibilities. These included neurosyphilis, syringomyelia, subacute combined sclerosis due to pernicious anemia, tumor, epidural abscess or a cord vascular accident of some type.

We might briefly review the physical findings and see where they lead us. He had hypotonia and hyporeflexia without any evidence of pyramidal tract involvement. That situation points definitely away from such lesions as a cord tumor in the lumbar area, although there may have been a tumor in the cauda equina, or myelitis (either traumatic or inflammatory) or epidural abscess. Confirmatory negative evidence concerning cord tumor, myelitis and epidural abscess were the spinal fluid findings which included a normal pressure, a cell count of three cells per cubic centimeter, and negative serologic tests for syphilis. Hence, we more or less eliminated from our thinking a diagnosis of cord tumor or myelitis. A vascular accident to the cord must be considered, and it is to be remembered in this connection that we were unable to get an adequate history. The two statements that we did get were that the patient had had slowly progressing difficulty with urination for approximately ten years and difficulty with the right knee for the same period of time.

The fact that he had so-called cord bladder pointed to a lesion either in the cauda equina or in the lower end of the cord, so we more or less eliminated vascular accident because of the slowness of the onset. Vascular accidents in the cord are somewhat uncommon and are characterized commonly by a rather sudden onset. Syringomyelia

myelia ordinarily occurs in the cervical and dorsal portions of the spinal cord, but there is a type called lumbosacral syringomyelia. There is very definite reason why we felt clinically this man did not have lumbosacral syringomyelia. He had absent knee and tendo-Achilles reflexes. These findings, plus the fact that he had none of the trophic changes of the feet so characteristic of this disorder, mitigate against the diagnosis of lumbosacral syringomyelia. The diagnosis of pernicious anemia with subacute combined sclerosis was untenable from the neurologic standpoint because of the fact that we were unable to find any evidences of pyramidal tract involvement. He did have cord bladder but this ordinarily appears very late in such a disorder. There were none of the systemic findings such as an abnormal tongue, the skin color of pernicious anemia or other physical evidences of that disorder, so we eliminated that diagnosis. We were left with the positive signs which so commonly occur in *tabes dorsalis*—namely, questionably abnormal pupils, a perforated nasal septum, absence of the deep reflexes without any plantar extension or evidence of pyramidal tract involvement, a neurogenic bladder and finally, a so-called neurogenic trophic joint or pseudo joint disorder. Our final diagnosis was *tabes dorsalis*.

Dr. E. D. Warner (Pathology): This patient had an ulcerative esophagitis. We have seen many patients with esophagitis who did have Wangensteen suction tubes in place, and we have wondered how much of it was terminal ulceration (degeneration of the esophageal lining in a person who was dying), and how much of it was due to the traumatic injury of the tube. Here is another patient that did not have a tube and did have a terminal ulcerative esophagitis at the lower end of the esophagus.

The main lesion is a fibrosarcoma which is mainly external and looks as if it had invaded the bone from the periosteum. I think it is reasonable to suppose that this arose as a periosteal fibrosarcoma of the lower end of the femur. It is of moderate differentiation so that it may have been there for some time, but I am dubious about it having been there for ten years. We can not tell from the history how long he had a pathologic fracture. The joint synovium was not involved by the tumor so that apparently we can rule out synovioma. Excessive mobility of a fracture, as in this patient, often leads to the production of a considerable amount of callus and the formation of hyaline cartilage.

The cord lesion could not have been present for ten years. It is too low to involve the main sen-

sory nerve supply to this area. Above this, the cord is perfectly normal so that we do not have a cord lesion which satisfactorily explains the loss of nerve function in the lower extremities. It might explain the bladder paralysis, however. The metastatic nodule in the lung was on the medial aspect of the left lower lobe so that it was obscured, not only by the heart, but also by the sternum.

Dr. Millikan: Dr. Warner has already pointed out that a lesion in the sacral cord will not produce an absence of deep reflexes at the knee. It can alter the tendo-Achilles reflex. This does not necessarily need to produce a positive plantar extensor response. One of the interesting things about this case was that the muscles innervated by the regions containing the lesions were apparently not impaired in their function. There was good function in the hamstrings, the glutei and the gastrocnemii. It might be pointed out that the serologic reactions in the blood and spinal fluid were negative. Approximately 40 per cent of the patients on whom we make a clinical diagnosis of *tabes dorsalis* have negative blood and spinal fluids. They are the so-called "burned-out" cases of neurosyphilis. I am unable to explain the findings on the basis of pathologic discoveries unless to say that they may be due to wrong interpretations in the first examination.

Student: Wouldn't the history of painful knee make one doubt the Charcot joint?

Dr. Ponseti: When we first saw the patient he had been in the hospital on another service for approximately one week, and at that time he did not have pain. Of course, that may have been due to his stuporous, semicomatose stage. When the patient was admitted to the hospital, however, the doctor who saw him and wrote the history said that he had slight pain in the fracture site. He had an enormous amount of abnormal motion at that time. If the patient had intact sensory nerves, I am sure he would have had much more pain than he had. On that basis we thought it was a Charcot fracture. Charcot joints are not always completely painless.

Dr. A. L. Sahs (Neurology): Was the thrombus in the anterior spinal artery neoplastic or some other type of thrombus? The reason I ask is that we have recently become interested in a couple of cases in which the spinal cord became softened in the presence of neoplastic disease elsewhere. We have been on the lookout for a neoplastic thrombus to the vessels of the spinal cord.

Dr. Warner: This thrombus was as an ordinary one. The young connective tissue, which I

presume could be confused with fibrosarcoma, we interpreted as organizing connective tissue. I believe it was not tumor. We have not, of course, entirely ruled out the possibility of a metastasis from this lesion to the peripheral nerve between the cord and the knee. That would require serial sections of the nerve all the way down from the spinal cord to the local lesion. I think that is a highly unlikely thing. It is a very unusual location for a metastasis, and were the metastasis there, it would probably be large enough to be grossly evident and would have been found. It is something that is not excluded as a possibility by the examination.

Neoplastic tissue is commonly lacking in sensory nerves. I would like to raise the question as to how much lack of pain (if he had lack of pain) in the fracture site can be attributed simply to the fact that the fracture was through tumor tissue which was insensitive and involved little viable original or non-neoplastic tissues. What is the experience in general with fractures through massive neoplastic growth?

Dr. Ponseti: They are usually painful. As yet I have never seen a painless fracture through a tumor.

Usually, even the most complicated cases are clarified at the post room. We should never have had a complete autopsy in this patient because it really complicated the diagnosis. If we had only a biopsy of the tumor, a fibrosarcoma would have been diagnosed. The bone changes and sclerosis would have been attributed to walking on a painless pathologic fracture. The diagnosis then would have been quite clear. I was very surprised to learn, however, that the patient did not have tabs or any other lesion in the nervous system to explain the lack of pain. How can this lack of pain be explained now? I do not know. This fibrosarcoma originated outside of the bone. It eroded the cortex and penetrated into the marrow canal. Even in this case where there was such an enormous tumor outside the bone, the tumor did not grow very far into the marrow canal, explaining quite clearly that the tumor was of outside origin. The bone ends are very sclerotic. There is a great amount of reactive new bone formation, the periosteum is very thick, and fragments of bone are scattered over an extensive area of the tumor. There is no question in my mind that lesions such as these could never have been produced if the patient had not walked or had not had painless motion in this area. The patient doubtless had some pain, as his Doctor told us, but it was not intense enough to preserve his fractured extremity immobilized. The bone is sclerotic and this

fragmentation is never seen in uncomplicated fibrosarcoma or in any bone tumor when the patient has sensation in the leg.

The histologic findings were discussed by Dr. Warner. I wish to emphasize the production of hyaline cartilage inside the tumor. The bone cells of fibrosarcoma are not osteogenic nor do they produce cartilage. This cartilage was produced by the stimulus of motion over the primitive cells of the mesenchyma present in the tumor area. It could not have been produced in such abundance if there had not been motion in the area. These cartilagenous bodies are very frequently seen in Charcot fractures and in the capsule of Charcot joints. This finding convinced me that the patient had a Charcot fracture over a pathologic lesion like the fibrosarcoma.

Fibrosarcoma can be seen in patients of all ages. One of our patients was four months old; another was 68 years of age. In both cases the tumor was mostly outside the bone and had eroded and penetrated into the bone. In other words, contrary to what we see in osteogenic sarcoma or the tumors which originate in the bone itself, in fibrosarcoma the tumor now is much larger outside the bone than inside.

Fibrosarcomas are usually not as osteolytic as in the case presented. This accounts for the fact that a fibrosarcoma outside of the bone may erode it slightly and compress the bone without penetrating into it. This type is called periosteal fibrosarcoma.

Fibrosarcomas usually do not produce bone. However, in a few cases we have seen abundant new bone formation. In one case the fibrosarcoma was in the right side of the lumbar spine and it attached itself to the transverse processes of the first and second lumbar vertebrae. A great amount of newly formed bone was found. This is extremely rare. This patient had, however, a typical fibrosarcoma which appeared microscopically relatively benign. The bone was reactive bone formed by the periosteum and by bone forming cells in the capsule which surrounded the tumor. This patient is one of the few cases we have seen who survived after the local removal of the fibrosarcoma. This patient is still alive and I believe he was operated on more than four years ago.

Another frequent finding in fibrosarcomas which surround but do not destroy the bone is spotty areas of calcification in the bone. They look very much like Caisson disease. I have seen these, I believe, in three cases. It is not an infrequent finding in fibrosarcoma, and I don't know their

STATE DEPARTMENT OF HEALTH



DIVISION OF TUBERCULOSIS CONTROL

L. H. FLANCHER, M.D., M.P.H.

Director

Another year has passed and we are again in the season when the festive stamps familiarly known as the Christmas Seals appear on our letters and packages. It might be appropriate at this time to pause and consider the essential part which the Iowa Tuberculosis Association and its affiliates, the various County Tuberculosis Associations, play in the tuberculosis program here in Iowa.

The Iowa Tuberculosis Association is part of a national program, that of the National Tuberculosis Association, founded to fight tuberculosis in the United States and in our own state. The organization is composed of voluntary workers, except for a few paid executives and fulltime workers from both professional (medical) and lay groups. The principal object is to educate the general public through speakers, movies, conferences, literature and the press in order that tuberculosis can be prevented, arrested and eventually eradicated from our communities. Funds to carry on these worthwhile projects are obtained through the sale of Christmas Seals. Everyone has a chance to participate in this work by the purchase of seals. Even the youngsters in the primary grades in school contribute small amounts and thus learn a valuable lesson in cooperation and unselfishness.

Let us enumerate some of the projects carried on in our own state by the Iowa Tuberculosis Association and the various county groups. During the past two years Association representatives met with a group of the Iowa State Medical Society and other interested persons to formulate and introduce in the state legislature a bill regulating the hospitalization of active cases of tuberculosis in sanatoria and providing free care for those unable to pay without having a lien placed on their property or on the property of those responsible for their care. This bill, as you know, was passed and enacted into law as of July 5,

1947, and is now in full operation with very gratifying results.

There are many problems involved other than "free care" when a patient refuses sanatorium care or leaves against medical advice. In view of this need, the Iowa Tuberculosis Association has employed a full-time social service consultant, Miss Paula Robinson, to work with sanatoria, county associations, physicians, welfare agencies and nursing services toward solving the difficulties encountered.

Also, after patients have accepted hospital care and received maximum benefit at an institution, it is necessary in some instances for these people to seek a different occupation than that in which they were previously employed, or they may need assistance in adjusting themselves to their former work. To help these persons secure the necessary training and make the proper contacts, the Iowa Tuberculosis Association has employed a fulltime rehabilitation worker, Mr. F. M. Davison, who consults with the individuals concerned and arranges for the necessary training.

Realizing the need for further study of new methods in the treatment of tuberculosis, forty of the County Tuberculosis Associations have appropriated the sum of \$14,500 during the past year to the National Research Program, for the study of streptomycin and related research. The Iowa Tuberculosis Association also took action appropriating \$5,400 to the Pediatrics Department of the University Hospital for research work in rheumatic fever and tuberculosis. This grant is to extend to April 1, 1949. The expenses of three Iowa physicians were paid by the Association, to attend the postgraduate course on thoracic diseases sponsored by the American Trudeau Society and held at Madison, Wis. A continuous educational program in the various counties is being carried on by the State and County Associations.

In 1937, after much deliberation, it was decided that a more effective program could be pursued by joining forces of the State Department of Health and of the Iowa Tuberculosis Associa-

tion to control and prevent tuberculosis. As a result the cooperative or case-finding program was launched by which funds from both organizations were pooled. The Iowa Tuberculosis Association carried the larger share of the burden of support until federal funds were made available in 1944. It was not until the last legislative assembly that state funds, directly for tuberculosis work, were appropriated for the first time. Iowa is the only state in the union in which an official organization and a voluntary organization have united in their battle against this disease.

The Iowa Tuberculosis Association carries on the educational program, distributes literature and assists wherever practicable in all tuberculosis work. The State Department of Health through its Tuberculosis Division renders certain medical services such as taking x-rays, interpretation of x-ray films, preparation of reports, and other matters pertaining to the control of tuberculosis. The director of the Division of Tuberculosis Control is also Medical Director of the Cooperative Case-Finding Program of the Iowa Tuberculosis Association.

All projects entailing x-ray examinations in industry are carried out after consent has been secured from the county medical society, from the company physician, employer and employee. The

miniature film service is performed without cost to employer and employee. Reports of positive findings are notified to the family physician, to the company physician or industrial nurse. No employee receives a direct report of the diagnosis except through his attending physician. When the miniature film reveals positive or suspicious findings, a large film is used to show abnormal changes in more detail.

Cooperation between all organizations has been of the most cordial and helpful nature and, it is believed, of mutual benefit not only to those participating but to the people of the state as a whole. That the cooperative program has brought results can be shown by statistics. In 1929 the mortality rate from tuberculosis was 33.2 per 100,000 population, while in 1946 it was 12.5 per 100,000 population, the third lowest rate among states in the United States.

It is desired to thank every one who has assisted in any way, through the purchase of seals, through personal effort, or as an organization member and to reiterate at this time that without the help of Iowa physicians and all tuberculosis workers, our state would not be in the enviable position that it now holds.

A Merry Christmas and Happy New Year to all.

MORBIDITY REPORT

Disease	Oct. '47	Sept. '47	Oct. '46	Most Cases Reported From
Diphtheria	4	7	17	Muscatine (2), Polk (2)
Scarlet Fever	52	13	72	Dubuque, Polk, Webster
Typhoid Fever	14	5	7	Appanoose (1), Black Hawk (2), Dallas (1), Fayette (1), Howard (2), Polk (1), Winneshiek (6)
Smallpox	0	0	0	.....
Measles	32	22	5	Johnson, Winneshiek
Whooping Cough	84	68	34	Des Moines, Dubuque, Polk
Brucellosis	85	101	140*	Black Hawk, Dallas, Linn, Muscatine, Page (4 each above counties, others scattered)
Chickenpox	47	4	69	Black Hawk, Des Moines, Washington
German Measles	4	1	2	Calhoun, Des Moines, Dubuque, Webster
Influenza	1	0	0	Dubuque
Malaria	4	3	8	Dallas, Adair, Mitchell, Polk
Meningitis	4	3	14	Cerro Gordo, Dallas, Polk, Tama
Mumps	52	8	36	Buena Vista, Linn, Pocahontas
Pneumonia	4	2	57	Black Hawk, Marion, Polk
Poliomyelitis	41	39	117	Clinton, Floyd, Linn, Polk, Woodbury
Tuberculosis	68	56	93	For the State
Gonorrhea	37	143	134	For the State
Syphilis	29	189	113	For the State

*Delayed Reports

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Nursing Education

Several weeks ago an examination was held for candidates for licensure as registered nurses. This examination was that of the League of Nursing Education and is accepted by many states in lieu of a state board examination. The League of Nursing Education has as one of its objectives advancement of the nursing profession, which, of course, is a laudable aim. However, when one hears the comment of candidates and sees some of the questions that were asked, there develops skepticism as to the direction of nursing education.

At the present time there is a tremendous demand for hospital and nursing facilities and an actual shortage of trained and student nurses. Perhaps there should be an evaluation of nursing education, for when one is familiar with schools of nursing, he realizes that it is extremely difficult to obtain sufficient students. That is true for several reasons, and perhaps largely because of the present trend in nursing education.

Most of the examination questions were of the multiple choice type, which tends to make the examination a guessing game, and it is not a good measure of the candidates' knowledge, nor does this examination make certain that the candidates have been well trained. It certainly has an extremely discouraging effect on the prospective students and student nurses. Those who wrote the examination are wondering what is required of a nurse.

On the other hand, the League of Nursing

Education is particularly interested in developing an examination which would be acceptable on a nationwide basis so that nurses would be required to pass one standard examination acceptable for all states. The reason multiple choice questions are desirable is the fact that they lend easily to machine scoring. This method proved very satisfactory in examinations conducted by the armed forces. In the experience of these agencies it was found desirable to withdraw a given test whenever a perfect score was achieved and to substitute another examination. The League of Nursing Education follows the same policy. In addition, this type of examination reveals strong and weak educators when considered on a nationwide basis.

It is felt that there is a need for a complete re-evaluation of nursing training, and that if we need nurses with such detailed knowledge, then perhaps we had better consider two kinds of nurses. We should train those who wish to become supervisors or specialists in the nursing profession, and a second group of those who are capable of performing the routine bedside nursing duties. If this is not done, we shall soon reach a place where most of our nurses will be too highly trained to consider doing the rather menial tasks sometimes expected of them.

Several leaders in nursing education have been advocating three "levels of nursing" (practical nurse, registered nurse, and administrative nurse). On the other hand the League of Nursing Education feels that regardless of "levels of nursing," each student in a nursing school should have free access to the full benefits of training with the best faculty available, and not be exploited as cheap labor by the hospital. It would seem that each girl should be allowed the privilege of determining the level for which she is best suited.

Veterans Administration Activities

An interesting statistical summary of Veterans Administration activities as of Sept. 30, 1947, has just been released. Inasmuch as a great deal of attention has been focused upon the various departmental functions of the government, the figures presented afford more than passing interest.

It is interesting to note that at the end of September, 1947, there were 18,450,000 living veterans of which 14,550,000 were World War II veterans. Of these 214,266 were receiving vocational rehabilitation; 1,766,346 were enrolled in educational institutions or receiving job training.

There were 2,196,763 drawing compensation

awards for disability. There were 92,066 patients in Veterans Administration hospitals. Of these 30,290 were being treated for service connected disabilities, yet 60,764 suffered from nonservice connected disabilities. The other 1,012 patients include nonveteran patients, temporary hospitalizations, and patients under observation. In addition there were 13,137 veteran patients in hospitals other than those operated by the Veterans Administration. Furthermore, 17,057 veterans were awaiting admission to a hospital of which 16,328 suffered from nonservice connected disability. This represents a marked increase since July of 1945 when 67,320 veterans were patients in Veterans Administration hospitals, 4,459 were in hospitals not operated by the V. A., and 4,329 awaited admission.

As Dr. Paul R. Hawley, chief medical director of the Veterans Administration has pointed out, this large increase in veterans receiving medical treatment has been managed by a medical staff of sufficient size and quality as not to jeopardize the standard of medical care rendered. He has been frank to admit that in any medical program it is the individual doctor, dentist, nurse and attendant who is finally responsible for the quality of medical care. Veterans who are justly entitled by public law to receive the benefits of education, disability allowance, and medical treatment would in most instances appear to be exercising their prerogatives in the light of the above figures.

It is rather amazing to review such statistics and to realize that criticism of the program has been infrequent. To the administrators of this program in Iowa a word of commendation is certainly not amiss.

A Comment in Regard to the Medical Treatment of Pyloric Stenosis

In reviewing the literature on the subject of pyloric stenosis there is found a wealth of material dealing with the surgical side of the treatment. Notations are made relative to the medical treatment such as thick feedings supplemented by some antispasmodic and vitamin therapy.

Granted that the etiology is obscure, a few remaining common sense factors in the treatment are entirely omitted from the medical side of the picture, even up to the point of preoperative care.

Reasoning and logic in infant feeding do not permit one to load an already overloaded stomach, even in noninvolved stomachs where vomiting is a problem from undigested food. The principles of food accumulation and putrefaction in overdistended stomachs are similar in both

pyloric involvement and vomiting of overfeeding from some other source. It does not sound reasonable to add one thick feeding after another to an already dilated stomach, adding to the hypertrophy of the stomach wall and increasing the power of the pyloric musculature. In a given suspected case (the earlier the treatment, the better the results) a regime should be instituted toward cutting down stomach distention, increasing its tone and perhaps aiding in relaxation of the pylorus.

The stomach should be lavaged twenty minutes before feeding with a good standard mixture on a three or four hour schedule. One minum of a one to one thousand solution of atropine sulfate is left instilled at the end of the complete stomach washing (a number 18 female catheter and glass barrel rubber bulb BD aseptic syringe is very suitable). What value the atropine solution may have is of course dependent upon its leaving the stomach. The caloric requirement is then gaviged in twenty minutes. This procedure is repeated each feeding time. This is accompanied by at least 300 mgms. of vitamin C and large amounts of vitamin B complex daily. Progress can be watched by observing the amount and nature of the curds returned from each lavage correlated with the weight gain or loss, and the amount of stool passed from day to day. One should not be discouraged with lack of progress even for several days.

Even though this routine seems to be failing the preoperative condition of not only the patient but of the stomach itself may be improved substantially if operative intervention is required. Usually only one hyperdermoclysis is necessary to have a patient in good surgical condition. Hospital stay can be cut down by teaching any mother with average intelligence the routine of a simple lavage and gavage.

Certainly these methods will fail in some instances, but fewer cases will go to surgery. Success will depend largely upon keeping the stomach clean with hot water and starting each feeding with fresh food. Obstinate cases are seemingly materially helped by keeping the body propped up at about a thirty-five degree angle at all times and giving frequent enemas, preferably before feedings, to relieve the tension and the lower bowel.

The Cerebral Palsied Child

Last month in Chicago, at the annual convention of the National Society for Crippled Children, a father of a child born with cerebral palsy presented a few constructive criticisms of his own

directed at public officials, physicians and parents of similarly afflicted children.

Although there are over 300,000 individuals in the United States suffering from cerebral palsy, the 3,500 in Iowa offer little in the way of political influence at the polls to bring about legislation in their own behalf. A law in the legislation of a southern state calling for notification on the birth certificate of all congenital deformities, including spastic paralysis, was sidetracked by the Commissioner of Health because there was too much already to be reported on birth certificates.

This particular parent stated it had taken three years for an accurate diagnosis to be made of his child's cerebral palsy, and that was due to a particular article in a weekly magazine which reported on Dr. Earl Reinhold Carlson's clinic and school at Pompano, Fla. He offered the suggestion that clinics might be established at all medical schools in order that medical students might be given the benefit of observing these unfortunate individuals.

Parents of spastic children are too often prone to hide them in a back room. If more parental companionship were offered to the victims of cerebral palsy, the lives of these children could be made much happier.

At the present time the Iowa Society for Crippled Children is operating a cerebral palsied demonstration school in Des Moines with twelve regularly enrolled pupils and a waiting list of sixteen others. The child welfare committee of the American Legion is taking an active interest in this problem among the children of its members. Three national sororities, Alpha Chi Omega, Zeta Tau Alpha and Alpha Gamma Delta, have appropriated funds to assist in training personnel to assist with cerebral spastic programs. The Iowa Spastic Club is an active organization which is accomplishing much to stimulate interest in this type of patient.

No physician in Iowa should be guilty of informing parents that a child afflicted with cerebral palsy is a "hopeless case," for practically every one of these children will benefit in some degree from proper treatment.

Report of Conference of State Secretaries and Editors

The 1948 annual conference of state secretaries and editors proved to have a much more practical, problem-solving program than most similar meetings. Held at American Medical Association (A. M. A.) headquarters November 7 and 8, well over one hundred representatives from the various

states heard such subjects as "Technics in Preparing and Displaying Exhibits for Lay Groups," "Effective Scientific Programs," "Survey of Group Practice," and "The Private Physician in the School Health Program" discussed the first morning.

The afternoon featured a panel discussion on the progress of prepayment medical care plans. James R. McVay, M.D., chairman of the Council on Medical Service of the A. M. A.; Alfred W. Adson, M.D., a member of the same council; L. Howard Schriver, M.D., president of Associated Medical Care Plans, Inc.; and Charles H. Crownhart, secretary of the State Medical Society of Wisconsin, discussed respective phases ably and were the recipients of a bombard of questions from the audience.

The round table discussions were of definite value, for each could choose his field of special interest and attend that meeting, the groups being small enough to facilitate free exchange of questions and ideas. John C. Parsons, M.D., of Iowa led the discussion on "Planning and Conducting State Medical Conventions."

The members of the public relations panel presented a resolution that the A. M. A. sponsor a meeting of state public relations councils and committees to consider the medical public relations and that, further, the A. M. A. develop a basic program as a guiding force for these groups. The rural medicine group acknowledged that the profession is faced with a problem of providing doctors for rural areas, possibly through the initiation of general practice departments in medical schools, the preaching and teaching of the advantages of rural practice, and the minimizing of emphasis on national boards.

At variance with the practice of former years, the secretaries and editors were divided for both the dinner and evening meeting. The editors' meeting, in the form of a clinic, proved highly educational. Four journals, those from California, Wisconsin, Ohio, and Connecticut, had been analyzed by experts in the fields of typography and format, literary aspects, editorial writing, and scientific material. The authorities expressed their opinions freely and were as freely prodded with questions from the audience.

At the concluding meeting Saturday morning Louis H. Bauer, M.D., a member of the board of trustees of the American Medical Association, discussed progress being made in the formation of a World Medical Association. The aims of the organization, as determined at its last meeting in Paris, are: (1) to promote closer ties with na-

(Continued on page 550)

SPEAKERS BUREAU

HERMAN J. SMITH, M.D., Des Moines, *Chairman*

ROBERT N. LARIMER, M.D., Sioux City

HORACE M. KORNS, M.D., Dubuque

BEN F. WOLVERTON, M.D., Cedar Rapids

L. C. HICKERSON, M.D., Brooklyn

CANCER INSTITUTES

The Speakers Bureau is happy to announce that a total of 725 physicians registered for the seven cancer institutes which were held during September, October and November, and that in addition, between 250 and 300 more physicians are estimated to have attended some part of the institutes. Des Moines started the schedule with 150 registered; Sioux City had 151 registrants and Council Bluffs 125. At Ottumwa 80 physicians signed attendance cards; at Fort Dodge there were 75; at Dubuque 69 and at Mason City 66.

The institutes were very well received. Favorable comments were heard on all of the speakers, and the physicians taking advantage of the institutes seemed to feel they had been most worthwhile. Council Bluffs and Fort Dodge have expressed a wish to have another institute in the spring.

Burlington and Creston have already planned to hold cancer institutes after the first of the year. Arrangements are now being made for speakers and announcements of dates will be made in the near future.

POSTGRADUATE COURSES

Postgraduate courses are being given at Sac City and Fort Dodge. The Sac City course has an average attendance of around 35 physicians, while the Fort Dodge course has an average of 55. Each course consists of five lectures, all designed to be helpful to the man in general practice. Both courses will be completed early in December.

Spring postgraduate courses are being planned for Creston and Burlington. Creston will hold its meetings on the five Wednesdays in March; Burlington dates have not been set as yet.

An obstetric and pediatric institute will be held at Sioux City, probably in March. This will be similar to the cancer institutes in nature. There will be two speakers on pediatric subjects, and two on obstetrical topics. Two of the talks will be given before dinner, two following. The institute will be held one day only. This will enable physicians in and near Sioux City to hear an intensive discussion of these two phases of medicine by attending only the one meeting.

Other communities which would like to have such institutes are asked to write the Speakers Bureau at once. There will be no fee in connection with the lectures; the speakers will be paid from funds provided by the State Department of Health.

FUTURE OF THE SPEAKERS BUREAU

The Speakers Bureau is the educational arm of the Iowa State Medical Society. It stands ready to arrange postgraduate courses for the various districts of the state; to procure speakers for county medical society meetings; to help with any health education movement to the best of its ability. Make use of it whenever you wish. It is here to serve you.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:45 p. m.

WSUI—Thursdays at 11:45 a. m.

- | | |
|----------------|---|
| Dec. 3-4 | T. B. Series—Medical Aspects of Tuberculosis
William A. Spear, M.D., Oakdale, Iowa |
| Dec. 10-11 | T. B. Series—Microfilm Surveys
Ralph E. Smiley, M.D., Mason City, Iowa |
| Dec. 17-18 | T. B. Series—Thoracic Surgery in Tuberculosis
Ralph A. Dorner, M.D., Iowa City, Iowa |
| Dec. 24-25 | Arthritis
W. D. Paul, M.D., Iowa City, Iowa |
| Dec. 31-Jan. 1 | Health Inventory
Arthur D. Woods, M.D., State Center, Iowa |

REPORT OF CONFERENCE

(Continued from page 549)

tional medical organizations and doctors of the world; (2) to maintain the honor and protect the interests of the medical profession; (3) to study and report problems of medicine in different countries; (4) to organize and exchange information; (5) to establish relations with and exchange views with the World Health organization; (6) to assist all to attain the highest possible level of health; (7) to promote world peace.

The general secretariat of the World Medical Association will be located in New York City; three assistant secretaries will represent the organization's official languages, English, French and Spanish. Dr. Bauer pointed out that the United States will gain little from its membership but will be able to contribute an immeasurable amount. The next meeting will be held in Prague, Czechoslovakia.

Iowa's representatives to the conference were John C. Parsons, M.D., Secretary; Mary McCord, Executive Secretary; Everett M. George, M.D., Editor; and Viola Turner, Assistant Editor.

NEWS NOTES

from the

Committee on Medical Service and Public Relations

HOSPITAL SURVEY AND CONSTRUCTION PROGRAM*

The Hospital Survey and Construction Program is, briefly, a grant-in-aid program. This means that a hospital approved for a grant of Federal funds must be constructed in accordance with the approved plans, and after such hospital is completed and placed in operation the Federal Government has no further interest or control in the hospital. The extent of assistance is one Federal dollar for two local dollars or one-third of the cost of constructing and equipping the hospital. The amount of money allocated to Iowa is rather small so that only a few hospitals may be constructed with Federal assistance. This number would probably be in the neighborhood of 400 beds each year the program operates. It might be added that there is no state control over the operation of hospitals constructed under this program, other than the licensing program required by the last legislature, under what is known as House File 465.

The character of the population in Iowa is gradually changing from rural to urban. This concentration of population has brought about a gradual concentration of service facilities, particularly specialized services. The average size of hospitals approved by the American Medical Association in 1920 was 52.3 beds per hospital. In 1946 it was 76 beds per hospital. At the same time the length of stay has been materially reduced from over 14 days to 9.2 days average stay per patient. Thus, the trend is definitely toward larger hospitals and a more effective use of such hospitals. It should be noted that as the length of stay in the hospital decreases the hospital area for laboratory and other diagnostic facilities must increase in order to care for the extra demand.

The ownership of hospitals is undergoing a definite change. The first county hospital in the United States was constructed in Washington County, Iowa, in 1912. The second one was in Jefferson County, Iowa, the following year. At the present time there are 10 county general hospitals with 15 more authorized. During approximately the same period city hospitals have developed until now there are 16 with one new one authorized. Proprietary hospitals have decreased until now there are fewer than one-half the number of such institutions as there were in

1920. The number of nonprofit hospitals has remained approximately the same with many of them increasing their bed capacity. At the present time there are 6 new nonprofit hospitals to be constructed.

The hospital survey and construction act requires that the local community not only raise two-thirds the cost of constructing a hospital but provide reasonable assurance of capability to continuously operate the hospital. The operating cost of a modern hospital is a very considerable item. Today it is, roughly, more than \$3,000 per bed. In other words, the annual budget of a hospital will be approximately one-third the cost of construction and equipping.

Another factor which must be considered in the hospital program is that of providing an adequate staff, both professional and service personnel. Not counting the doctors, a modern hospital requires on the average of about one and one-half employees per patient to be cared for. Approximately 56 per cent of the hospital budget goes for salaries. It is most difficult to assemble a staff required to open a new hospital and the first several months of operation provide problems which test not only the staff but also the community. It has been found, however, that as the operation of the hospital becomes accepted in the community these difficulties become resolved or accepted as part of the operation of the hospital.

Any plan which might be presented for the development of a hospital system must be constantly revised as hospitals are actually built. It is recognized that any plan depends upon the desires and ability of the local community to provide hospitals and that, therefore, any recommendations developed on the state level are no more than recommendations until the local communities decide whether to build a hospital, and if so, where and how large the facility is to be.

SUPPORT FOR CANCER RESEARCH IN IOWA

At the close of October Dr. H. W. Morgan, President of the Iowa Division of the American Cancer Society, presented President Virgil M. Hancher of the State University a check for \$35,000 to use in research on radio active isotopes. According to Dr. E. D. Plass, the contemplated laboratory will be one of the first in the country to have been established with funds contributed locally. The Society is already supporting a program of research in the Papanicolaou diagnostic test in the University.

*Resume of remarks made by Verne A. Pangborn, Director, Hospital Division, Iowa State Department of Health, Des Moines, Iowa, at meeting held Oct. 9, 1947, at Hotel Fort Des Moines.

VETERANS ADMINISTRATION

Veterans Administration Surgical Service*

The reorganization of the Surgical Service at the Veterans Hospital in Des Moines was accomplished over a period of several months during the spring and summer of 1946 by the Dean's Committee. The surgical policies and residency program were and are supervised by the Dean's Committee of the School of Medicine of the State University of Iowa. The selection and recommendations for the appointment of professional personnel and residents by this committee have provided the service with outstanding men both locally and from the various parts of the country.

The program and standards were set high; as a result of this, approval of both the residencies in general surgery and anesthesiology has been granted by the Council on Medical Education and Hospitals of the American Medical Association, American College of Surgeons, and the American Board of Anesthesiology.

The surgical staff at this time is composed of seven consultants, all certified by their respective boards of surgery; three attending surgeons, also certified by the boards in their respective field; three full-time ward surgeons; two full-time members of the Department of Anesthesiology; fifteen residents in general surgery and one in anesthesiology.

During the first year of reorganization, which ended July 31, 1947, 3,000 patients were treated by the surgical service as compared to 1,385 for the year previous to the change. The surgical procedures accomplished during this year also revealed a marked upward trend, not only in the total number but in the variety and scope of type operations performed. Every branch and subspecialty of surgery was well represented both in the major and minor fields. The total surgical procedures for this first year was 3,033 of which 1,262 were major and the remaining 1,771 minor operations, whereas for the previous year

the total number of operations was 1,290, of which 441 were major and 849 were minor.

A blood bank was established through the co-operation and supervision of both the Department of Surgery and the Laboratory Service. A total of 1,164 pints of blood was used during this period as compared to 120 pints for the year prior to the reorganization. Of the total, 915 were given to patients on the surgical service.

The postoperative mortality for the entire year in the treatment of 3,000 patients and the performance of 3,033 operations was 0.72 per cent.

The period of hospitalization was reduced 8.5 days during the period of study as a result of a development of an efficient organization, a more rapid method of work-up and diagnosis, a shorter postoperative stay, and a larger, more efficient and energetic staff.

The Department of Anesthesiology has been developed and expanded under the supervision of Dr. Stuart Cullen, consultant in anesthesiology, from the University Hospital of the State University of Iowa. The department functions as a part of the general surgical service; its members consist of two fulltime doctors, one Veterans Administration resident and one resident from Dr. Cullen's staff from the University, who is on a rotation assignment here. This department is now well supplied with the newest and latest equipment and is capable of administering any or all of the new anesthetic agents so that surgery of any type can be performed.

Continued expansion of these services is being planned so that a greater number of patients can and will be treated this coming year. In conjunction with this anticipated work load, additional appointments are being made in anesthesiology and general surgery. Approval for residencies in several of the subspecialties of surgery such as orthopedics and genito-urinary surgery is now being sought.

The Surgical Service and the Department of Anesthesiology will continue to maintain the most rigid standards of the recognized boards and of the American Medical Association to offer the veteran surgical treatment second to none.

Louis T. Palumbo, M.D.
Chief, Surgical Service

*Published with permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the author.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS FRED MOORE, 634 40th St., Des Moines 12

President-elect—MRS. A. G. FELTER, Van Meter

Secretary—MRS CHARLES A. NICOLL, Panora

Treasurer—MRS. M. A. ROYAL, 1138 Thirty-seventh Street, Des Moines 11

PRESIDENT'S REPORT ON NATIONAL CONFERENCE OF PRESIDENTS

The National Conference of Presidents and Presidents-Elect was held in the LaSalle Hotel, Chicago, November 7 and 8. There was an excellent attendance from all parts of the country with officers and chairmen of the National Auxiliary sitting in and presenting personally the plans for work which had been printed earlier in the year. Throughout the two days, emphasis was given to the importance of the Auxiliary and an informed membership and the need of increasing the membership to include every doctor's wife. Our strength is in numbers.

Mrs. Eustace Allen, president of the National Auxiliary, expressed the hope that the membership of 35,170 will be doubled this year toward the ultimate goal. In a luncheon talk, Dr. Bortz, President of the American Medical Association, again expressed his faith in the potentialities of the Auxiliary by saying, "The Woman's Auxiliary is the greatest single asset organized medicine has, and the most respected." He also shared his fine belief in the great role medicine has to play in this exciting age because of its responsibility for directing medical education, the education of the public through health education, and medical research.

One of the leading spirits of the World Medical Association, Dr. Routley of Canada, also spoke at the luncheon on the recent conference in Paris where the world organization was formed. The objectives are twofold: to assist all people in the world to attain the greatest health and to assist world peace.

Much of the presentation from committee chairmen was centered on the first objective of the Auxiliary—an effective public relations program. Fundamental to such a program is an alert, informed membership. There are many things every doctor's wife should know to be well informed—the progress that is being made on prepayment medical care plans, the Ten Point Health Program of the A.M.A., the legislation that is important in the state, etc. Definite accomplishment was reported in ways of projecting the Auxiliary into communities and making a contribution toward good public relations.

Mrs. Fred Moore, President

PRESIDENT-ELECT'S REPORT ON CONFERENCE OF PRESIDENTS

It was the privilege of your president-elect to attend, with your president, Mrs. Fred Moore, the

Conference of State Presidents and Presidents-Elect and National Chairmen of Standing Committees which was held November 6 and 7 in LaSalle Hotel, Chicago.

The meeting, being a conference, afforded much opportunity for exchange of ideas among the state presidents at both the luncheons and the dinner in the beautiful Chicago Room. The enthusiasm and friendliness evidenced by the women were highly contagious; each woman left the conference with heightened determination to bring to the meeting in June a report of progress for her state.

Because it is very difficult to convey the spirit of the state reports, I shall bring you some of the factual highlights—the needs, projects, accomplishments and means used by the states to promote their work.

Almost without exception, the presidents reported the need for better organization and an increase in membership. The means most used for promoting organization were personal contacts through trips, by printed materials, and by the division of states into districts with "counselors" or "chairmen" to assist the state organization committee. To be specific, the Michigan president had just completed a tour through the upper peninsula to bring the work of the Auxiliary to the scattered doctors' wives of that region; Pennsylvania had sent out a printed "Flyer" to impress prospective members with the thought, "You are privileged;" New York had prepared an informative panel of questions and answers. Ohio had been keeping a notebook kit for the use of each officer—a handbook of information.

The presidents were agreed that the Auxiliary's most important work lies in the fields of public relations and legislation. The projects were planned to assist the medical profession in community work, having to do with the Ten Point Health Program of the A.M.A. There had been meetings to promote health, efforts to assist the handicapped, fair booths and programs to present the Voluntary Health Insurance Plan and Nurse Recruitment, and assistance with tumor clinics, etc. Wisconsin reported a very successful health lecture forum and exhibit in Milwaukee. People in schools, clubs and industry were contacted and lecturers were told "to speak for the man in the street."

The reports also emphasized the point that auxiliary members should inform themselves about pending legislation and that they should know their legislators. Several instances were cited where ob-

jectionable bills were killed by the activities of Auxiliary members.

Nurse recruitment was an ever increasing phase. Plans are afoot over the nation to interest girls in the nursing profession and to assist needy girls financially. Kansas reported an ambitious plan—a series of teas in strategic towns radiating from Topeka to which high school girls through cooperation of the schools, will be brought by bus. Other states are also sponsoring teas and essay contests for this purpose.

There was much talk about the importance of subscribing for and reading *The Bulletin*. It was considered an "indispensable text for officers" which should be filed for future reference. The states hoped to increase the circulation of *Hygeia*, and many were striving to win in this year's subscription contest. A few states hope to place *Hygeia* in every school, and Connecticut has a movement to have *Hygeia* used as a supplementary text in all high schools.

The better organized states have Auxiliary news sheets or papers, some of which, besides reporting Auxiliary activities and relaying program materials, include beauty hints, recipes, and are enlivened by one or more cuts.

The importance of keeping records and maintaining archives was mentioned. For the former purpose Missouri is sponsoring an essay contest on the topic, "Medical Heroes of the Last One Hundred Years." Louisiana has given its Auxiliary the task of digging up cultural items of historical interest to be kept in its medical school museums.

The ways used to raise money varied from the sale of items such as novel billfolds to invitations to silver teas, bridge parties and "come as you are" luncheons. The Ohio Auxiliary sponsored a thrift shop in one city where slightly worn garments, after cleaning, were brought to be sold on a percentage basis. Some states reported memorial funds and treasuries of several thousand dollars.

The conference was a great inspiration. It seemed that New York's slogan, "Team Work," was in evidence on every hand. As one president said, "We all have one interest in common—the profession."

Mrs. Moore and I had a wonderful two days at the conference. I hope that I have passed on a bit of the enthusiasm and a few helps gleaned from the reports.

Mary R. Felter, President-elect

ACTIVITIES OF COUNTY AUXILIARIES

The Butler County Auxiliary always meets with the doctors for dinner the second Monday of each month. The Auxiliary membership is 100 per cent. The Auxiliary has made contributions to the Cancer Fund, the Tuberculosis Drive, and has forwarded fifty cents per capita to the Nurses' Loan Fund. The last two years it has given a bushel of apples to the County Home.

The programs have proved very interesting. Many of them have been based on material from *Hygeia*.

Topics of some were Centennial of American Medical Association, The Physically Handicapped, The Latest on Cancer, Curare Comes of Age, Cosmetics—Facts and Fancies.

Mrs. B. V. Andersen, Secretary

Members of the Dallas-Guthrie Medical Auxiliary met at Panora Oct. 16, 1947, and enjoyed luncheon with the doctors. The Auxiliary meeting was called to order by the president, Mrs. H. W. Smith. Eleven members and two guests were present. The following reports were given: Treasurer, Mrs. W. V. Thornburg—\$27.50; *Bulletin*, Mrs. C. A. Nicoll—11 subscriptions; *Hygeia*, Mrs. C. R. Osborn—33 subscriptions; Membership, Mrs. E. T. Warren—26 members.

Mrs. M. H. Brinker of Jefferson spoke briefly on the new set-up of the special education program, with stress on work for handicapped adults as well as children.

Mrs. E. T. Warren discussed proposed changes for the State Constitution of the Auxiliary; Mrs. A. G. Felter urged public relations work in connection with the Nurses' Loan Fund and the cancer program.

A motion was made by Mrs. Loosebrock and carried that each member donate fifty cents or more to the Nurses' Loan Fund. Fifteen dollars was collected at this meeting, and the Dallas-Guthrie Medical Society contributed twenty-five dollars to the fund.

A report of the nominating committee was given by the chairman, Mrs. Felter. The following names were submitted: president, Mrs. C. R. Osborn, Dexter; president-elect, Mrs. D. W. Todd, Guthrie Center; first vice president, Mrs. P. W. Beckman, Perry; second vice president, Mrs. C. A. Nicoll, Panora; secretary, Mrs. W. A. Seidler, Jamaica; treasurer, Mrs. W. V. Thornburg, Guthrie Center.

Mrs. P. W. Beckman, Secretary Pro-Tem
Mrs. F. A. Wilke, Secretary

Following an excellent dinner in the Nurses' Hall at St. Joseph's Mercy Hospital, Dubuque, a State Cancer Institute was held on Nov. 6, 1947. Twenty members and their wives from four counties were present. The following program was presented: "The Cancer Program," Mrs. W. E. Dempster; "Carcinoma of the Stomach," E. R. Schmidt, M.D.; "Carcinoma of the Lung," R. A. Dorner, M.D.

Mrs. W. A. Henneger

Wives of the visiting doctors attending the Ottumwa Cancer Institute were guests of the Wapello County Woman's Auxiliary Oct. 23, 1947. Mrs. Harold Spilman and Mrs. S. F. Singer were in charge of arrangements of the dinner held at the Ottumwa Hotel. Mrs. Fred Moore, State Auxiliary President, and Mrs. W. E. Dempster of Des Moines were guest speakers.

Mrs. Wilson C. Wolfe

IN APPRECIATION

On behalf of the Woman's Auxiliary to the Iowa State Medical Society, we extend our gratitude to

Mrs. Noble Irving for her services as State Treasurer. Dr. Irving is taking a residency in radiology at the University of Kansas beginning Jan. 1, 1948. The good wishes of the Woman's Auxiliary follow the Irvings to their new home in Kansas City, Kan. Mrs. M. A. Royal, 1138 Thirty-seventh Street, Des Moines, is the new State Treasurer.

PRESIDENT'S ADDRESS

"Public relations is a term that has come to be frequently used among us within the past two years. And public relations is not simply a matter of cultivating the good will of the public. No doubt the term—not our use of it—originated in some such thought, but the true conception of public relations, it seems to me, lies in a sense of responsibility to the public and the determination to perform a public duty. When that conception is fully realized and activated, the good will of the people toward the profession as a whole and its members will come as a matter of course."—James McLeod, M.D., *J. of the South Carolina Medical Assoc.*, June, 1947.

—"News Letter," Council on Medical Service, A.M.A., Aug. 20, 1947.

MEDICINE HERE AND THERE

H. B. Hook, Mason City, Chairman of the 1947 Cancer Campaign, which ended Sept. 1, 1947, reported \$253,668 subscribed; the state quota was \$204,240. Franklin and Worth counties won the highest subscription honors.

Thirty-five thousand dollars of the above fund was donated to the University of Iowa to finance equipment for a radiation laboratory, the first of its kind in the state, and one of the first in the United States established with funds from public subscription.

The State Department of Public Instruction now requires all drivers of school busses to pass a physical examination. Busses as well as drivers have been examined, and the Department recommends to school boards that persons who have reached the age of 65 do not drive school busses. This seems like an active move toward combining health and safety.

Even though 654 women registered for state examinations for nurses' certificates on Sept. 23, 1947, which is the largest number in the history of Iowa, 60,000 nurses are needed in the United States now (*Journal of the American Medical Association*, Oct. 25, 1947). As Auxiliary members, let us not lessen our efforts to secure more and more recruits and to contribute to the State Auxiliary Nurses' Loan Fund!

President Truman declared Oct. 5-11, 1947, to be National Employ and Physically Handicapped Week. Secretary of Labor Schwollenbach led a national drive to help a half million handicapped veterans find jobs. In addition to the half million GI's, there are about five disabled civilians for every soldier. Vocational rehabilitation in Iowa is under the De-

partment of Public Instruction directed by Howard Benshoof. The Department supplies treatment, equipment, training, advice, and secures a job where one or all needs are indicated.

DIRECTORY ON REHABILITATION AND SERVICES TO HANDICAPPED

The increased interest in rehabilitation and services to the handicapped has been responsible for "A Directory of Agencies and Organizations Concerned with Rehabilitation and Services to the Handicapped" being published by The New York Times. The Directory was compiled by Howard A. Rusk, M.D., and Eugene J. Taylor and contains a brief description of the activities of some agencies interested in and working with handicapped persons. Copies may be obtained by writing the New York Times, Times Square, New York 18.

—"News Letter," Council on Medical Service, A.M.A., Aug. 20, 1947.

DID YOU KNOW?

That Mrs. Janette S. Murray of Cedar Rapids, who was chosen the American Mother of 1947, was formerly active in the State Auxiliary? In a letter to Mrs. Fred Moore she wrote: "I am an old Auxiliary fan. I think it was before your time. I was the first secretary and had an article in *The Iowa Journal* on "Why Join the Auxiliary." They made it into a leaflet. I tried that year to organize Linn County. We had a luncheon of most of the doctors' wives and organized with the usual officers, but it never functioned very actively."

That the President of the Iowa State Medical Society, Harold A. Spilman, M.D., considers the Woman's Auxiliary of vital importance, particularly in the field of public relations? The following is a letter addressed to Councilors and Deputy Councilors of the State Medical Society, Sept. 6, 1947:

September 6, 1947

TO COUNCILORS AND DEPUTY COUNCILORS:

Dear Doctor:

I am writing you in regard to the Woman's Auxiliary. Founded twenty-five years ago, it is being expanded rapidly both on a national and local scale. The Rich report to the House of Delegates of the AMA urged that the Auxiliary be used for public relations, saying the doctors' wives were by nature, training and association ideally fitted to carry on a good public relations program for the medical profession.

Dr. Edward L. Bortz, president of the AMA, in his talk to the House of Delegates at Atlantic City, had the following to say:

"The fair ladies are favored by nature in their understanding of social relations and in their intense loyalty to this great profession. The Auxiliary represents probably the most important instrument in the field of public relations which organized medicine has, and yet its value has been for the most part overlooked. In many ways the Woman's Auxiliary can explain to the public the ideals and objectives for which medicine stands. A word of caution . . . a well informed mind using statements based on factual data is essential before any statements are made to public groups."

Mrs. Fred Moore, president of the Woman's Auxiliary to the Iowa State Medical Society, is working diligently to organize more county Auxiliaries. She and her officers and chairmen are developing positive, constructive programs for Auxiliary activity. She must have the support of the medical profession if the Auxiliary is to function to the utmost of its capacity, and for that reason I ask you to cooperate with the members of the Auxiliary if they call upon you. Remember what Dr. Bortz said—a well informed mind is essential. Unless the doctors are willing to keep their wives informed, or to tell them where they may obtain the information, they are depriving themselves of valuable allies in the field of public relations. I am sure, though, that I can count upon you for your help.

Sincerely yours,
Harold A. Spilman, M.D.
President

HAS:K

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

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Iowa Physicians of Early Meetings of the American Medical Association

WALTER L. BIERRING, M.D., Des Moines

There were no Iowa physicians present at the organization meeting of the American Medical Association in Philadelphia in May, 1847, or at the second session in Baltimore the following year. However, at the third annual session held in Boston (Dr. John Collins Warren, President) a physician from Iowa was registered for the first time—Dr. A. B. Malcolm of Dubuque, as a delegate from the medical department of the State University of Iowa. Of particular significance was the presence of Dr. John F. Sanford of Davenport, who registered as a delegate from the Rock Island, Illinois, Medical School. It was his enthusiasm and inspiration received at the Boston meeting that led to the organization of the Iowa State Medical Society in June, 1850, at Burlington.

At the fourth session in Cincinnati, May, 1850, Dr. S. G. Armour of Keokuk represented the medical department, State University of Iowa, and Dr. J. M. Witherwax of Davenport was present by invitation.

At the Charleston meeting in May, 1851, the following are listed as delegates: Dr. J. D. Elbert, Burlington; Dr. J. M. Witherwax, Davenport (Iowa Medical and Chirurgical Society); and Drs. J. G. Armour and D. L. McGugin of Keokuk, representing the Iowa University Medical Department; however, the Transactions do not state definitely whether they were present.

Dr. J. H. Rauch of Burlington is registered at the Richmond session in May, 1852, as representing the State Medical and Chirurgical Society.

At the New York session of the Association in May, 1853, Dr. J. C. Hughes, Keokuk, Dean of the University of Iowa Medical Department, is registered as a delegate from that institution.

At the eighth annual session in St. Louis in May, 1854, eleven delegates were registered from Iowa; Dr. J. D. Elbert, Keosauqua; Dr. John H. Rauch, Burlington, and Dr. Thomas Siveter, Salem, representing the Iowa State Medical Society;

Dr. E. R. Ford and Dr. D. L. McGugin, Keokuk Medical Department, Iowa University; Dr. Edward A. Arnold, City Hospital of Keokuk; Dr. N. VanPatton, Clinton County Medical Society, and Dr. John T. Ely, Cedar Rapids, from the Northwest Medical Society.

Iowa was represented at the Philadelphia meeting in May, 1855, by Dr. John F. Sanford, Keokuk, the only delegate registered, although Dr. E. A. Arnold, Davenport, and Dr. J. D. Elbert, Keosauqua, are listed on two important committees.

At this session the first formal presidential address was given by Dr. C. A. Pope, St. Louis. It is also noted in the Transactions—"At twelve o'clock noon, May 2, 500 members with ladies formed in procession to Independence Hall where Dr. Isaac Hays of Philadelphia made an address."

The Detroit meeting in May, 1856, was attended by a large number of physicians from the midwest states, Iowa having three delegates—Dr. R. S. Lewis of Dubuque, Dr. D. L. McGugin and Dr. C. E. Francis of Keokuk, and Dr. J. M. Alder of Davenport, the latter representing the State Medical Society. In the directory of 1856, twenty Iowa physicians were listed as permanent members of the Association.

The 1857 session at Nashville, Tenn., was the first meeting of the Association held in a southern city since its organization. Dr. Asa Horr and Dr. Wm. Watson represented the Dubuque Medical Society, and Drs. J. C. Hughes and D. L. McGugin of Keokuk—the "Iowa University College of Physicians and Surgeons."

In 1858 the Association met for the first time in the National Capitol. The Iowa delegates were Drs. Asa Horr and Tom O. Edwards of Dubuque, and Dr. J. R. Allen of Keokuk.

At the election the first day, Dr. Tom O. Edwards was chosen second vice president, the first Iowa physician to be elected an officer of the Association. He presided at one of the sessions

the following year at Louisville, Ky. At this meeting in 1859, the following additional Iowa physicians were present: D. L. McGugin and Daniel Meeker of Keokuk, William Watson of Dubuque and J. Sanger of Davenport.

The session in New Haven, Conn., in June, 1860, was the last meeting of the Association before the Civil War, and it did not meet again until 1863. Seven Iowa physicians attended this session: D. L. McGugin, Daniel Meeker, Keokuk (Medical Department, Iowa University); E. J. Fountain, E. S. Barrows and J. W. H. Baker of Davenport (Iowa State Medical Society); J. M. Witherwax, Davenport (Davenport and Rock Island Pathological Society) and Horace Carpenter, Blue Grass (Scott County Medical Society). The list of permanent Iowa members had grown to twenty-eight.

The Association met for the first time in Chicago in 1863. The president, Dr. Eli Ives, elected at the New Haven session in 1860, had died during the interim, and the first vice president, Dr. Wilson Jewett of Pennsylvania, opened the meeting and presided during the first day. Six Iowa physicians attended, J. W. H. Baker of Davenport, Samuel C. Lay and M. K. Taylor of Keokuk, and L. H. Cary of Toledo.

The New York session of the Association in June, 1864, was attended by five Iowa physicians: A. T. McCurdy and D. L. McGugin of Keokuk; Thomas J. Iles and J. J. Tomson of Davenport; and M. K. Taylor, the latter representing the United States Army General Hospital of Keokuk.

At this meeting Dr. N. S. Davis, Chicago (the founder of the A.M.A.), was elected president on the first day of the session. Because of a change in the Constitution requiring the president to serve the year following his election, Dr. Davis was president during two years and presided at the New York session and the following year in Boston.

A new name appears among the Iowa delegates at the Boston meeting in 1865, that of Dr. W. F. Peck of Davenport, representing the Scott County Medical Society. He was a member of the nominating committee at this session, and his name appears frequently in subsequent proceedings of the Association.

One other Iowa physician was present at the Boston meeting, Dr. Horace Hamilton of National (North Iowa Medical Society).

The Association met for the second time in Baltimore in May, 1866. Three Iowa delegates attended this session: J. M. Witherwax of Davenport, M. K. Taylor and J. C. Hughes of Keo-

kuk, the latter appearing on the program with a paper on "Lithotomy."

The session in Cincinnati in May, 1867, was the first meeting to be attended by three Des Moines physicians, J. C. Blackburn, A. G. Field, and E. Whinnery. Keokuk was represented by J. C. Hughes, M. K. Taylor and George M. Kellogg. At this meeting Dr. J. C. Hughes was elected vice president of the Association.

The Association met for the second time in Washington, D. C., in May, 1868, with Dr. Samuel D. Gross as president. At this session, Iowa was represented by two delegates, Dr. Thomas J. Iles of Davenport and Dr. H. T. Cleaver of Keokuk.

Dr. William O. Baldwin of Alabama was elected president, and New Orleans was chosen as the meeting place the following year—both actions with the thought of "healing the wounds of war."

President Gross, in greeting the president-elect, spoke these words: "I welcome you as the representative of our long lost brethren. May God bless you; God bless our people; God bless all of us."

At the memorable session of the Association in New Orleans in May, 1869, no Iowa physician was present. Dr. Edward H. Bowman of Andalusia, Ill., represented the Iowa Illinois Central District Medical Association.

The Washington session in 1870 was attended by two Iowa physicians, Dr. W. H. Baxter of Wilton, and Dr. J. W. Cowden of Bellevue, both representing the State Medical Society.

The Association met for the first time on the Pacific Coast in May, 1871, at San Francisco, the Iowa State Medical Society being represented by A. C. Roberts of Fort Madison, S. B. Thrall and J. Williamson of Ottumwa, and the Keokuk College of Physicians and Surgeons by Dr. J. C. Hughes.

The twenty-fifth annual session of the Association was held in Philadelphia in May, 1872. Pres. David W. Yandell of Kentucky in his address referred to the city of Philadelphia as "the cradle of American medical education and the American Medical Association." This session was attended by seven Iowa physicians: Dr. Langan, Clinton; James C. Lay and G. M. Staples, Dubuque; Fred Andros, McGregor; E. A. Hazen, A. W. Cantwell and W. F. Peck of Davenport, the latter being a delegate from the medical department, State University, Iowa City.

In May, 1873, the Association met for the second time in St. Louis and probably because of convenient transportation it was attended by twenty-two Iowa physicians. Several new names appear among the delegates: P. J. Farnsworth,

Clinton; A. W. McClure, Mt. Pleasant; W. W. Grant, Davenport; George F. Jenkins and A. S. Maxwell, Keokuk; Thomas Byrnes, Wolcott; and W. S. Robertson, Muscatine.

Twelve Iowa physicians attended the Detroit session in June, 1874. The name of Dr. D. S. Fairchild of Ames appears for the first time. During the succeeding fifty years he was a faithful attendant at annual meetings of the Association.

At the meeting the next year in May, 1875, in Louisville, only three delegates from Iowa were registered: Drs. George W. Carter, Marshalltown; Joseph Gamble, LeClaire; and J. Williamson, Ottumwa.

The Association met in Philadelphia in June, 1876, during the Centennial Exposition commemorating the Centenary of the Republic. The meetings were held in Horticultural Hall. J. Marion Sims presided during this interesting and historic session. A number of distinguished guests were present, among them being Dr. Joseph Lister who gave an address on "Wound Infection and the Use of Antiseptics in Surgery." Iowa was represented by twenty-five delegates, the largest number in attendance at an annual session up to that time. Many new names are noted as also the absence of such leaders as W. F. Peck, J. C. Hughes, and others of that rank.

At the Chicago session in June, 1877, the Iowa delegation numbered fifty members, the largest to that date. Again names appear for the first time at the Association meeting, as E. T. Clapp and J. C. Shrader of Iowa City; Henry Ristine of Cedar Rapids; A. B. Bowen of Maquoketa; and William D. Middleton of Davenport.

In 1878 the session of the Association was held at Buffalo, N. Y., and Iowa was represented by seventeen delegates among which we again note some new names: A. A. Deering, Boone; G. P. Hanawalt, Des Moines; J. M. Knott, Sioux City; and J. D. McCleary, Indianola.

The Association met in Atlanta, Ga., in 1879, with Dr. Theophilus Parvin as president. Only four Iowa physicians attended this session: Thomas S. Parr of Indianola; W. F. Peck of Davenport; H. B. Ranson of Burlington, and J. C. Hughes of Keokuk.

The annual session in June, 1880, was held in New York City with Dr. Lewis A. Sayre presiding. Sixteen Iowa physicians registered as delegates.

The meeting of the Association in Richmond, Va., in May, 1881, was attended by Washington F. Peck and J. C. Hughes, delegates from the two rival medical schools at Iowa City and Keokuk.

The St. Paul session in June, 1882, was the banner year in attendance of Iowa delegates; one hundred and twenty-two Iowa physicians were registered at this meeting; of these thirty-eight represented the State Society.

In this long list appear many new names—just to mention a few, H. R. Page and J. F. Kennedy, Des Moines; B. H. Criley, Dallas Center; Ira K. Gardner, New Hampton; Oscar Burbach, Waverly; J. M. Emmert, Atlantic; H. L. Getz, Marshalltown; D. W. Crouse, Waterloo; S. A. Spilman, Ottumwa; and H. B. Young, Burlington.

The session in 1883 was held in Cleveland. In this year the publication of the Transactions was discontinued and the Journal of the Association was established with Dr. N. S. Davis as editor.

As the proceedings were published in the Journal, it became difficult to determine the attendance of delegates each year from Iowa, except as they appeared on the program or were members of the different committees.

The attendance of Iowa physicians increased each year and until the reorganization was completed in 1902 and 1903, delegates represented state, district and county societies, hospitals and medical schools.

During the first fifty years of the American Medical Association Iowa physicians served as officers, chairmen of sections, and as members of important committees. Drs. Tom A. Edwards, J. C. Hughes and W. F. Peck served as chairmen of the sections on anatomy and surgery, and Dr. W. S. Robertson served as chairman on State Medicine. The latter was the first president of the Iowa State Board of Health when it was organized in 1880. Dr. James T. Priestley was a member of the Board of Trustees from 1894 to 1902.

The interesting contacts at these early meetings of the American Medical Association must have distinctly stimulated better society organization and higher standards of medical practice in Iowa.

IOWA PHYSICIANS INDUCTED INTO INTERNATIONAL COLLEGE OF SURGEONS

At the Twelfth Assembly and Convocation of the United States Chapter, International College of Surgeons, held in Chicago October 3, the following doctors were among the 810 surgeons inducted into the College:

Fellows—Frederick L. Nelson, Sr., M.D., Ottumwa; Arthur Steindler, M.D., Iowa City; Earl Derward McClean, M.D., Des Moines; Frederick L. Wahrer, M.D., Marshalltown.

Associates—Elsie Reid Carrington, M.D., Clinton; Oswald C. Hardwig, M.D., Waverly.

Affiliate—Frederick L. Nelson, Jr., M.D., Ottumwa.

Matriculate—Frank A. Wilke, M.D., Perry.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

GIFFORDS TEXTBOOK OF OPHTHALMOLOGY—By Francis H. Adler, M.D., Professor of Ophthalmology, University of Pennsylvania Medical School. Fourth edition. W. B. Saunders Co., Philadelphia, 1947. Price, \$6.

HEADACHE—By Louis G. Moench, M.D., Assistant Clinical Professor of Medicine, University of Utah School of Medicine; Internist, Salt Lake Clinic, Salt Lake City. The Year Book Publishers, Inc., Chicago, 1947. Price, \$3.50.

HISTORY OF MEDICINE—By Cecelia C. Mettler, A.B., Ed.B., A.M., Ph.D., Late Assistant Professor of Medical History, University of Georgia, School of Medicine, and Late Associate in Neurology, College of Physicians and Surgeons, Columbia University. Edited by FRED A. METTLER, A.M., M.D., Ph.D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University. The Blakiston Company, Toronto, 1947. Price, \$8.50.

HOW LIFE IS HANDED ON—By Cyril Bibby, M.A., M.Sc., F.L.S., Senior Lecturer at the College of St. Mark and St. John, London; Sometime Scholar of Queen's College, London; Author of "Sex Education: A Guide for Parents, Teachers, and Youth Leaders." Emerson Books, Inc., New York, 1947. Price, \$2.

LABORATORY MANUAL OF MICROBIOLOGY FOR NURSES—By Elizabeth S. Gill, B.S., R.N., Instructor in Nursing, Department of Nursing, College of Physicians and Surgeons, Columbia University, New York; and JAMES T. CULBERTSON, Ph.D., Professor of Bacteriology and Parasitology, University of Arkansas School of Medicine, Little Rock, Ark.; formerly Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, New York. G. P. Putnam's Sons, New York, 1947. Price, \$1.50.

MANUAL OF PHYSICAL DIAGNOSIS With Special Consideration of the Heart and Lungs—By Ellis B. Freilich, M.D., F.A.C.P., Professor of Medicine, University of Illinois College of Medicine; Professor of Medicine, Cook County Graduate School of Medicine; Attending Physician and Chief of Tuberculosis Staff, Cook County Hospital; Consultant to the Chicago Municipal Tuberculosis Sanitarium and Franklin Boulevard Community Hospital; Attending Physician, Mount Sinai Hospital; Attending Physician, University Hospital, Chicago; GEORGE C. COY, M.D., Associate of Medicine, University of Illinois College of Medicine, Attending Physician in Tuberculosis, Cook County Hospital; Associate, Mount Sinai Hospital; Attending Physician, Franklin Boulevard Community Hospital, Chicago. Revised in collaboration with JOSEPH K. FREILICH, M.D., Adjunct, Mount Sinai Hospital; Clinic Physician, Michael Reese Hospital; Attending Physician, Franklin Boulevard Community Hospital, Chicago. The Year Book Publishers, Inc., Chicago, 1947. Third edition. Price, \$5.

MORPHOLOGIC HEMATOLOGY—Special Issue No. 1 of Blood, The Journal of Hematology—By William Dameshek, M.D., Editor-in-Chief. Grune & Stratton, New York, 1947.

PHARMACEUTICAL LABORATORY MANUAL—By R. A. Kuever, Ph.D., Ph.C., Dean of the College of Pharmacy, Professor of Pharmacy, Director of the Pharmaceutical Laboratories, State University of Iowa. J. B. Lippincott Co., Philadelphia, 1947. Price, \$2.75.

PHARMACOLOGY THERAPEUTICS AND PRESCRIPTION WRITING for Students and Practitioners—By Walter Arthur Bastedo, Ph.G., Ph.M. (Hon.), M.D., Sc.D. (Hon.), F.A.C.P., Consulting Physician, St. Luke's Hospital, Staten Island, and the Staten Island Hospital; President, United

States Pharmacopoeial Convention 1930-1940; Member of Revision Committee, U. S. Pharmacopoeia. Formerly Curator of the New York Botanical Garden, Attending Physician, City Hospital, New York, Instructor in Pharmacology, Cornell University, Associate in Pharmacology and Therapeutics, and Assistant Clinical Professor of Medicine, Columbia University. Fifth edition. W. B. Saunders Co., Philadelphia, 1947. Price, \$8.50.

PICTORIAL HANDBOOK OF FRACTURE TREATMENT—By Edward L. Compere, M.D., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School; Chairman, Department of Orthopedic Surgery, Wesley Memorial and Children's Memorial Hospitals, Chicago; Consultant in Orthopaedics, U. S. Naval Hospital, Great Lakes, Illinois; SAM W. BANKS, M.D., F.A.C.S., Associate in Surgery, Northwestern University Medical School; Attending Orthopaedic Surgeon, Chicago Memorial and Hines Veterans' Hospitals; Consulting Orthopaedic Surgeon, Provident Hospital, Chicago; revised with the assistance of CLINTON L. COMPERE, M.D., F.A.C.S., Associate in Surgery, Northwestern University Medical School; Attending Orthopaedic Surgeon, Wesley Memorial Hospital, Chicago. Illustrated by HAROLD LAUFMAN, M.D., F.A.C.S., Department of Surgery, Northwestern University Medical School. The Year Book Publishers, Inc., Chicago, 1947. Second edition.

PRACTICAL CLINICAL PSYCHIATRY—By Edward A. Streckler, A.B., A.M., Sc.D., Litt.D., LL.D., M.D., Professor of Psychiatry, School of Medicine, University of Pennsylvania; FRANKLIN G. EBAUGH, A.B., M.D., Professor of Psychiatry, University of Colorado, School of Medicine; Director, Colorado Psychopathic Hospital; and JACK R. EWALT, M.D., Professor of Neuro-Psychiatry; Director, Galveston State Psychopathic Hospital, University of Texas Medical Branch. Section on Psychopathologic Problems of Childhood by LEO KANNER, M.D., Associate Professor of Psychiatry, Johns Hopkins University School of Medicine. Sixth edition. The Blakiston Co., Philadelphia, 1947. Price, \$5.

SEX POWER IN MARRIAGE With Case Histories: A Realistic Analysis concerning the Sexual and Emotional Problems of Marriage—By EDWIN W. HIRSCH, B.S., M.D. Research Publications of Chicago, 1947. Price, \$3.

A TEXTBOOK OF CLINICAL NEUROLOGY with an Introduction to the History of Neurology—By Israel S. Wechsler, M.D., Clinical Professor of Neurology, Columbia University, New York; Neurologist, the Mount Sinai Hospital; Consulting Neurologist, Montefiore Hospital and Rockland State Hospital, New York. Sixth edition. W. B. Saunders Co., Philadelphia, 1947. Price, \$8.50.

A TEXTBOOK ON PATHOLOGY OF LABOR, THE PUERPERIUM, AND THE NEWBORN—By Charles O. McCormick, A.B., M.D., F.A.C.S., Clinical Professor of Obstetrics, Indiana University School of Medicine; Consulting Obstetrician to William H. Coleman Hospital for Women, Indianapolis City Hospital, and Sunny Side Sanitarium. Second edition. The C. V. Mosby Company, St. Louis, 1947. Price, \$8.50.

TRICHOMONAS VAGINALIS AND TRICHOMONIASIS—By Ray E. Trussell, M.D., Associate in Hygiene and Preventive Medicine, Former Research Assistant in Obstetrics and Gynecology, State University of Iowa. With an introduction by E. D. PLAYS, M.D., Professor of Obstetrics and Gynecology, State University of Iowa. Charles C. Thomas, Publisher, Springfield, Ill., 1947. Price, \$6.

BOOK REVIEWS

A MANUAL OF THE COMMON CONTAGIOUS DISEASES

By Philip Moen Stimson, A.B., M.D., Associate Professor of Clinical Pediatrics, Cornell University Medical College; Visiting Physician, Willard Parker Hospital; Director, Poliomyelitis Service, The Knickerbocker Hospital; Medical Director, The Floating Hospital of St. John's Guild; Associate Attending Pediatrician, The New York Hospital; Consulting Pediatrician, The

Meadowbrook, Bergen Pines, and Norwegian Lutheran Hospitals. Fourth edition, thoroughly revised. Lea & Febiger, Philadelphia, 1947. Price, \$4.

Dr. Stimson has brought up to date his manual of contagious diseases which has in the past been a popular reference. Two new chapters have been incorporated into the text. These concern the sulfonamides and antibiotics in the treatment of the common contagious diseases, and the unique chapter on poliomyelitis. The latter is an organized presen-

tation of the current concepts of the disease, practical in nature, which the entire profession will find of great interest and value.

Students of nursing as well as medicine will find this manual valuable as a guide in the prophylaxis, differential diagnosis, and treatment of the contagious diseases.

C. L. B.

HOW LIFE IS HANDED ON

By Cyril Bibby, M.A., M.Sc., F.L.S., Senior Lecturer at the College of St. Mark and St. John, London; sometime Scholar at Queen's College, London; Author of "Sex Education: A Guide for Parents, Teachers and Youth Leaders." Emerson Books, Inc., New York, 1947. Price, \$2.

This book has been developed by an authority in sex education and clearly presents in a simple, straightforward fashion the facts of life. The volume should be valuable to all parents in teaching children wholesome sex attitudes.

E. M. G.

UROLOGY IN GENERAL PRACTICE

By Nelse F. Ockerblad, B.S., M.D., F.A.C.S., Professor of Clinical Urology, University of Kansas School of Medicine; Senior Attending Urologist to St. Luke's Hospital; Consulting Urologist to the Children's Mercy Hospital, Kansas City, Mo.; Diplomate of the American Board of Urology. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.75.

This volume is recommended as a fine reference for urologic problems confronting the general practitioner. The author has avoided discussion of problems which would be of interest only to a urologist.

In twenty-one short chapters he has condensed most of the common urologic conditions with which the average general practitioner comes in contact.

Differential diagnosis of such conditions, which are most frequently missed, affords a very informative chapter, especially for the young general practitioner or intern.

This is truly an excellent book and would have a valuable place in all hospital libraries as a reference for residents and interns as well as nurses.

E. L. M.

OFFICE TREATMENT OF THE EYE

By Elias Selinger, M.D., Attending Ophthalmologist, Mount Sinai, Cook County and Michael Reese Hospitals. The Year Book Publishers, Inc., Chicago, 1947. Price, \$7.75.

The title of this book speaks well for the modesty of the author. Actually the book presents much more than ocular therapy. Every chapter starts with a concise description of the etiology, pathology

and clinical picture of the disease, the treatment of which is to be discussed.

The book starts with a chapter on chemotherapy describing in detail the methods of administering the newer biologicals as well as the technic of foreign protein and other parenteral medication.

The chapter on glaucoma is particularly worthwhile to read, as it is fully up to date on the newer drugs such as the choline derivatives, D.F.P. and furmethide.

There is a chapter on refraction and one on squint. While it seems questionable whether these topics should be included in this kind of a book, the material is presented in a practical matter, though some of the procedures advocated are somewhat unorthodox.

The book ends with a chapter on iontophoresis with the author's own apparatus. The method seems rather cumbersome, and it is doubtful that many ophthalmologists will feel like employing this kind of treatment.

All in all the book is well written and interesting to read and will be a valuable aid in the treatment of all common and most of the less frequently encountered eye diseases for both beginning and experienced ophthalmologists.

H. H. G.

NUTRITIONAL AND VITAMIN THERAPY IN GENERAL PRACTICE

By Edgar S. Gordon, M.D., Ph.D., Associate Professor of Medicine, University of Wisconsin. The Year Book Publishers, Inc., Chicago, 1947. Price, \$5.

The past decade has brought with it a new era of nutritional evaluation, especially those chemical components known as vitamins. The average medical practitioner is too confused by the voluminous claims made for the various vitamins in therapy to have a clear working knowledge of these substances.

The author has performed an excellent service in clarifying the present status of the vitamins in an interesting manner.

Dr. Gordon suggests the likelihood of therapeutic success of vitamins, as observed, being frequently due to a general nutritional improvement rather than to the one specific vitamin administered. Also the psychologic factor is so important that the actual benefit obtained from the vitamin is difficult to analyze.

The great need for accurate, practical laboratory methods for determining vitamin or other nutritional deficiencies is brought to our attention and suggests such possibilities within a not too distant future.

The third edition of this book should be interesting and valuable to medical students as well as to all practicing physicians.

O. A. E.

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk County

The Black Hawk County Medical Society met at the Russell-Lamson Hotel, Waterloo, October 21 at 6 p. m. Dr. Austin Smith, Secretary of the Council on Pharmacy and Chemistry of the American Medical Association, spoke on "Medical Needs and Their Solutions." Following the regular meeting those interested in the formation of a "Journal Club" held a brief discussion. At the November meeting held at the Elks Club, Waterloo, November 18, nominations for officers were presented and a scientific program given by Drs. Eller, Herbert Shulman, and C. J. Mikelson.

Greene County

Members of the Greene County Medical Society and their wives met for dinner at the Woman's Club October 23. Two sound films were shown. The same group met for dinner November 17 after which a talk on nursing education was heard by the group.

Johnson County

The Johnson County Medical Society met at Hotel Jefferson, Iowa City, November 5. Following a 6 o'clock dinner Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*, and *Hygeia*, spoke.

Linn County

The Linn County Medical Society will meet December 11 for a 6:30 p. m. dinner in the Hotel Roosevelt, Cedar Rapids, following which the Arctic explorer, Mr. Vilhjalmur Stefansson of New York, will discuss "An Anthropological Approach to Nutritional Problems."

Louisa County

The regular monthly meeting of the Louisa County Medical Society was held in Columbus Junction November 13. Following a dinner at Walgren's Cafe, the group met at the office of Dr. J. W. Pence. Dr. J. H. Chittum was given a vote of thanks for his services as secretary for the past year. Election of officers resulted as follows: Dr. Elmer Groben, president; Dr. L. E. Weber, vice president; Dr. J. H. Chittum, secretary-treasurer; Dr. J. W. Pence and Dr. K. T. De Yarman, censors. The next meeting will be held in Wapello.

Marshall County

The Marshall County Medical Society held its regular monthly meeting at the Methodist Church, Marshalltown, November 4. Dr. F. E. Thornton of Des

Moines presented a talk on "Aseptic Necrosis of Bone."

Polk County

Members of the Polk County Medical Society met at the Des Moines Club November 19 for a 6:30 dinner. The scientific portion of the program consisted of a talk on "Ocular Manifestations of Acute Head Injuries" by Dr. Henry H. Gurau, Des Moines, and an address on "Plastic and Reconstructive Surgery of the Hand" by Dr. Julian M. Bruner. The latter was illustrated by a United States Navy film.

Poweshiek County

Members of the Poweshiek County Medical Society held an annual meeting at the home of Dr. W. B. Phillips of Montezuma October 14 at 7:30 p.m. Dr. T. E. Brobyn of Grinnell and Dr. W. B. Phillips gave case reports. After the meeting refreshments were served.

Scott County

The November meeting of the Scott County Medical Society was held November 4 at 6 p. m. at the Lend-a-Hand Club. Dr. W. E. Adams, Professor of Surgery at the University of Chicago, spoke on "Surgical Treatment of Carcinoma of Esophagus and Cardia," following which the film recently released by the Education Committee of the American College of Surgeons was shown. It is entitled "Anomalies of the Bile Ducts and Blood Vessels; Stricture of the Common Duct."

Taylor County

The Taylor County Medical Society met in Bedford October 13. Dinner was served to the members at the Rainbow Hotel at 6:30 p. m. They then attended a public meeting in the high school auditorium where a moving picture from a New York laboratory was shown.

Wapello County

The Wapello County Medical Society members have been meeting regularly at St. Joseph Hospital, Ottumwa. On September 2 Dr. W. E. Herrick of Ottumwa presented "Tetanus: A Clinical Study with Presentation of Three Cases." September 16 Dr. R. O. Hughes of Ottumwa spoke on "Infant Feeding: The Physician's Responsibility." Dr. D. G. Emanuel, also of Ottumwa, addressed the group on "Cardiac Emergencies in General Practice," while on November 4 Dr. R. H. Flocks of Iowa City spoke on "Newer Developments of Treatment of Cancer of the Bladder." On December 2 Dr. William H. Algie of Kansas City, Kan., will talk on "Brucellosis."

Woodbury County

The Woodbury County Medical Society met November 13 for a 6:30 dinner in the ballroom of the Mayfair Hotel, Sioux City. Dr. Thomas J. Dry, Associate Professor of Medicine at the University of Minnesota and Consultant in Cardiology at the Mayo Clinic, spoke on "The Management of Cardio-Vascular Decompensation."

PERSONALS

Dr. Albert D. Blenderman, house physician at St. Joseph Hospital, Sioux City, will locate in Paullina in the near future. Dr. Blenderman is a graduate of the University of Vermont College of Medicine and served his internship at Beverly Hospital, Beverly, Mass.

Dr. Earl S. Burch of Dayton recently resumed his practice following improvement of an eye condition which had necessitated temporary retirement.

Dr. Titus E. Evans will join the staff of the State University of Iowa College of Medicine as research professor in radiology and radiobiology on January 1, according to recent announcement. Dr. Evans, formerly a member of the University of Iowa faculty, is now with the Department of Radiology of the College of Physicians and Surgeons at Columbia University.

Dr. A. E. Evers of Emmetsburg has announced his intention to open a practice in Pella in the near future. A World War II veteran, Dr. Evers has been in Emmetsburg a year.

Dr. W. M. Hale, Head of the Department of Bacteriology at the State University of Iowa College of Medicine, was elected president of the North Central branch of the Society of American Bacteriologists at that group's recent meeting in Madison, Wis. Dr. A. P. McKee, Associate Professor of Bacteriology, was elected secretary-treasurer.

Dr. Merl Kadel of Tipton has become associated with the Spirit Lake Clinic. A graduate of the State University of Iowa College of Medicine, he had been in Tipton nine years. Also, Dr. Thomas L. Ward of Arnolds Park has established an office at the clinic.

Dr. Herbert C. Merillat of Des Moines spoke to the Jasper County Public Health Council October 29 on care of the mentally ill.

Dr. Wilbur M. Miller, Head of the Psychopathic Hospital in Iowa City, addressed the Lions Club of that city October 22. Dr. Miller, a member of the State Board of Eugenics, discussed the need for sterilization laws in Iowa.

Dr. C. F. Obermann, superintendent of the Cherokee State Hospital, has resigned to become Director of Mental Hospitals in Oklahoma. He will assume his new duties in early December.

Dr. Roger L. O'Toole has opened offices for the practice of medicine in Waterloo. A veteran of over six years in the Army Air Forces, Dr. O'Toole will limit his practice to pediatrics.

Dr. Frank R. Peterson, formerly Head of the Department of Surgery of the State University of Iowa College of Medicine, has opened a consultation practice in general surgery in Cedar Rapids.

Dr. A. W. Puntenney, formerly of Stratford, has opened offices for the practice of medicine in Boone. A graduate of the University of Kansas School of Medicine, he served in the Navy Medical Corps before coming to Stratford.

Dr. Ross G. Randall opened offices in Waterloo November 10 where he will limit his practice to diseases of the eye, ear, nose and throat. Dr. Randall was graduated from the State University of Iowa College of Medicine in 1938, interned in Wisconsin State General Hospital, and served as flight surgeon in the Army Air Forces four years.

Dr. William Spear of Oakdale was elected president of the Iowa section of the Trudeau Society, the new name given to the Iowa Sanatorium Association, at a recent reorganization meeting.

Dr. Herbert E. Stroy of Osceola spoke to the Rotary Club members of Ottumwa on the subject of "Socialized Medicine" recently.

Dr. William Wolf of Stacyville has become associated in the practice of medicine and surgery with Dr. A. M. Hess of West Union. A graduate of the State University of Iowa College of Medicine, Dr. Wolf served three years in the Army, holding the rank of captain at the time of his release.

MARRIAGE ANNOUNCEMENT

Miss Patricia Ann Galligan, daughter of Mr. and Mrs. William E. Galligan of Ames, and Dr. Gwilym S. Lodwick, Jr., son of Mr. and Mrs. Gwilym S. Lodwick of Mystic, were united in marriage October 18 in the Collegiate Presbyterian Church, Ames. The bride is a graduate of Iowa State College and took postgraduate work at the State University of Iowa. Dr. Lodwick was a major in the Medical Corps, serving in the European Theater and having previously received his medical degree from the State University of Iowa College of Medicine. He is now a resident at the University Hospital, Iowa City.

DEATH NOTICES

Canfield, Herbert Warren, aged 72, of Baxter died of a heart attack October 29 in Newton. Dr. Canfield, who retired two years ago after practicing thirty-six years in Baxter, was graduated from the Keokuk Medical College, College of Physicians and Surgeons, in 1903. He was a life member of the Jasper County and Iowa State Medical Societies.

Maguire, Leo Martin, of Minneapolis, aged 55, died November 10 of injuries suffered when he fell through a trap door at a hunting club near that city. A graduate of the Creighton University School of Medicine, Omaha, Dr. McGuire was chief medical officer at Veterans Hospital while in Des Moines, and after leaving that post in July, 1947, served in Minneapolis in the same capacity. He was a member of the Polk County and Iowa State Medical Societies.

Meents, Diedrich Janssen, of Fort Madison, aged 70, died November 6 at his home of a heart ailment. Dr. Meents, a graduate of the State University of Iowa College of Medicine, Iowa City, with the class of 1907, moved to Fort Madison in 1926 after practicing in West Point, Iowa, several years. He was a member of the Lee County and Iowa State Medical Societies.

Schoon, Harold William, aged 43, of Sibley, died November 9 at his summer home in Cook, Minn., after a lengthy illness. Dr. Schoon, a co-founder of the Schoon Hospital in Sibley, came to that town in 1933 following his graduation from the State University of Iowa College of Medicine in 1931. He was a member of the Osceola County and Iowa State Medical Societies until his retirement because of ill health in 1946.

CLINICOPATHOLOGIC CONFERENCE

(Continued from page 544)

exact origin. It may be the result of occlusions or emboli or deficient blood supply to the bone marrow at the area where the tumor is located. According to our experience, the prognosis of fibrosarcoma of bone is very serious. We have had very few cases who survive over five years after surgical treatment. The treatment calls for amputation of the extremity when it is feasible.

Student: How do you account for the pupillary changes in this patient?

Dr. Millikan: All I can say is that there is nothing very unusual about the presence of small pupils which react poorly to light in an elderly individual. Of course they are so small in the first place that there can be very little constriction when light is projected onto the retina. In general we find that not uncommonly, and we do

not think that is a pathognomonic sign of neurosyphilis. I would not try to account for it necessarily on an arteriosclerotic basis.

TREATMENT OF VETERANS UNDER HOME TOWN MEDICAL CARE PROGRAM

Veterans of all wars are entitled to treatment by their local physician for service-connected disabilities, but it is the responsibility of the doctor and/or veteran to first obtain authorization before services are rendered except in emergent cases. For authorization to render emergent hospital inpatient care, phone the Chief Medical Officer of the Veterans Administration for the required authorization.

Emergent outpatient treatment may be rendered without first obtaining telephonic authority, although the request for authorization should be made immediately by mail, showing the cause for emergency, service connection and disability and other pertinent information to substantiate the request. In no instance can emergency treatment be authorized by Veterans Administration if request is received more than fifteen days after commencement of emergency treatment.

In all cases not emergent the request for treatment should reach the Veterans Administration ten days prior to month treatment is to be rendered listing the number and type of visits (office, home day, home night, etc.) deemed necessary for that calendar month. It is *not* possible for Veterans Administration to honor treatment for periods other than the month authorized.

It is very essential for auditing purposes of Veterans Administration that all treatment reports be forwarded direct to IOWA MEDICAL SERVICE, 324 LIBERTY BLDG., DES MOINES 9, IOWA, within ten days after the end of the month that treatment was actually rendered. This will further serve to expedite payment of claims to the profession.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Committee on Maternal and Child Health

October 19, 1947

The Committee on Maternal and Child Health met in the central office Sunday morning, October 19, 1947, with the following members present: H. E. Farnsworth, chairman; R. H. McBride, Lee F. Hill, C. P. Phillips, J. F. Gerken, H. A. Weis, and R. O. Hughes of the committee; Herman J. Smith, chairman of the Speakers Bureau, and J. M. Hayek of the State Department of Health. Dr. Hayek explained that federal funds were available for presenting pediatric and obstetric institutes in Iowa; Dr. Smith said the Speakers Bureau could take care of the mechanics of the meetings; the Committee approved of the idea. Subjects to be discussed at the institutes were listed and tentative procedures developed. Meeting adjourned at 1 p. m.

POSTGRADUATE TRAINING FOR IOWA NURSES

The Iowa State League of Nursing Education has asked President Virgil M. Hancher of the State University of Iowa to give serious consideration to the establishment of a postgraduate school of nursing, according to Mona Jackson, president of the state league.

"The public's increasing demand for good nursing service has put a heavy burden on Iowa's schools of nursing," Miss Jackson said, "but the load could be reduced if these schools were able to secure an adequately prepared staff of teacher and supervisory personnel."

She pointed out that no postgraduate courses are available for nurses in Iowa at present and that nurses usually go to Minnesota, Illinois and Colorado for this type of study and frequently do not return, thereby aggravating the already existing nurse shortage. Miss Jackson asserted there was a very definite need for instructors, supervisors and experts in special branches such as pediatrics, psychiatry and obstetrics. She added that there was also need for a combined nursing and college course of five years leading to a nursing certificate and a baccalaureate degree.

The Iowa Nurses' Association and the Iowa Board of Nurse Examiners have also advocated establishment of a nursing education department at the University.

PAPANICOLAOU RESEARCH

The Iowa Association of Clinical Pathologists at a recent meeting voted to extend the work of the group investigating cellular diagnosis at the University Hospital. At present it is said that only three men in the state, two at the University and one in Des Moines, have had sufficient special training in the recognition of malignant cells. It is the purpose of the Society to urge all pathologists in the state to investigate the technic in the hope that the method soon will be available to physicians anywhere in Iowa.

REFRESHER COURSE FOR OPHTHALMOLOGISTS

The Chicago Ophthalmological Society will give a 40-hour refresher course December 8 to 13, inclusive. The faculty will include members of the Eye Department of the University of Chicago, the University of Illinois, Loyola University, Northwestern University and staff members of all of the principal hospitals of Chicago. Instruction will consist of didactic and practical courses, emphasis being placed on the practical courses given to small groups. Physicians practicing ophthalmology and eye, ear, nose and throat are eligible for the course. The fee will be \$100. For details write to the registrar, Miss Maude Fairbairn, 8 West Oak Street, Chicago, Ill.

AMERICAN ACADEMY OF ALLERGY MEETING

The American Academy of Allergy will hold its annual convention at Hotel Jefferson, St. Louis, Mo., December 15 to 17, inclusive. All physicians interested in allergic problems are cordially invited to attend the sessions as guests of the Academy by registering without payment of fee. The program, the scientific and technical exhibits have been arranged to cover a wide variety of conditions where allergic factors may be important. Papers will be presented dealing with the latest methods of diagnosis and treatment as well as the results of investigation and research. Round table conferences will be held on Monday afternoon, Dec. 15, 1947. Advance copies of the program may be obtained by writing to the Chairman on Arrangements, Charles H. Eyermann, M.D., 634 North Grand Boulevard, St. Louis, Mo.

NOTICE OF LIQUIDATION OF MIDWESTERN AGRICULTURAL WORKERS' HEALTH ASSOCIATION

Notice is hereby given that the Midwestern Agricultural Workers' Health Association will not provide services for the foreign agricultural workers after December 31, 1947.

Any outstanding authorizations or bills payable by the association should be submitted for payment very promptly. It is not expected that payments can be made from Health Association funds after January 31, 1948.

This situation is brought about by the liquidation of the Labor Branch program.

A. E. von Bergen, Chief of Operations, Labor Branch

EXAMINATION ANNOUNCED FOR PSYCHIATRIC RESIDENT AT ST. ELIZABETHS HOSPITAL

The Civil Service Commission has announced an examination for filling resident-in-training positions in Psychiatry at St. Elizabeths Hospital, Washington, D. C. This psychiatric residency consists of eleven months in psychiatry and one month in neurology and psychosomatic problems. The salaries are \$2,400 and \$2,700 a year.

To qualify, applicants must have completed their fourth year of study in an approved medical school and must have the degree of either B.M. or M.D. In addition, they must have successfully completed an accredited full rotating internship of at least nine months or must now be serving such internship. Persons who attain eligibility while serving their internship may have their names submitted for appointment, but they cannot enter on duty until their internship is completed. No written test is required.

Full information and application forms may be secured at most first and second-class post offices, from civil service regional offices, or direct from the U. S. Civil Service Commission, Washington 25, D. C. Applications must be received in the Commission's Washington office not later than Dec. 16, 1947.

THE JOURNAL

of the

IOWA STATE MEDICAL SOCIETY

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